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The Personnel Journal

Devoted to Industrial Psychology, the Science of Work, the Human Factor in Management and the Satisfactory Adjustment of Individuals to Their Occupations

Employee Training in Wide-Spread Organizations
—*R. O. Beckman*

What Do You Think of the Personnel Department?
—*Harold V. Gaskill*

Vocational Satisfaction of Stanford Graduates
—*C. Gilbert Wrenn*

Unemployment in Buffalo and Lincoln—1932–1933
—*Cleon O. Swayzee and Frederick E. Croxton*

The Effect of Color on Workmen
—*David H. Pierce and James D. Weinland*

Suggestions for Measuring Recklessness
—*Harold E. Burtt and Orian C. Frey*

Technological Change and Retraining —*Otis E. Young*

News Notes Personnel Books Current Periodicals

Edited by WALTER VAN DYKE BINGHAM, 29 W. 39th St., New York

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The Personnel Journal

THE PERSONNEL JOURNAL publishes original investigations in the applied sciences that contribute to knowledge and effective direction of people at work.

THE PERSONNEL JOURNAL is published for the Personnel Research Federation whose object is "the furtherance of research activities pertaining to personnel in industry, commerce, education, government, and other fields, wherever such researches are conducted in the spirit and with the methods of science."

THE PERSONNEL JOURNAL renders a service not only in centralizing information about personnel research, but also furnishes a continuous accumulation of authoritative material in this field. Significant contributions by specialists in the biological and medical sciences, psychologists, psychiatrists, engineers, and economists, have been published.

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Employee Training in Wide-Spread Organizations

By R. O. Beckman, *The Psychological Corporation, New York*

Mr. Beckman reviews the basic factors and various techniques involved in setting up a job training program. Although the reference is to wide-spread and chain organizations, the approach is sufficiently comprehensive to apply at least in part to any business organization. The author has chosen illustrations from procedures in a large number of representative companies and has drawn freely upon his own experience as Personnel Director for the Kroger Grocery and Baking Company, Scott-Burr Stores Corporation, and Wise Shoe Company.

ORGANIZED employee training in business has proved its dollar and cents value. First recognized as a vital factor in business management not much more than twenty years ago, the problem of developing the potentialities of employees has commanded increasing attention during the past decade. The shift from small units to great corporations, with an ever widening gap between management and workers in understanding the essentials of their common enterprise, has also accentuated the training need.

Despite curtailment in personnel activities on the part of firms forced into drastic economies during the past four years, some sales and distributing organizations have recognized that greater skill than before is needed to maintain and develop sales volume. Neither superior merchandise, lavish advertising, costly store fronts, nor enticing displays will move stock from shelves or counters unless salespersons are properly trained in selling. No matter how plentiful the supply of workers nor how carefully they are selected, employees on any type of work cannot perform their duties satisfactorily or economically without adequate training.

Although there is as yet little indication of an extension of personnel and training procedures throughout industry as a result of the National Industrial Recovery Act, there is reason to assume that higher wage costs and new, formalized employee relations will inevitably encourage employers to devise a systematic plan of educating and informing their workers in matters of business economy and operation. Executives who desire the genuine coöperation of all members of their organization in working towards industrial recovery will seek to admit them more largely to a partner relationship, which is fostered

by employee training procedures. The new codes may thus be expected to stimulate the training movement.

THE SITUATION IN FAR-FLUNG MERCHANDISING ORGANIZATIONS

During the ten years following the world war, millions of dollars were spent in training employees engaged in manufacturing processes. Although attention on the part of executives is now definitely centered on problems of consumption and distribution as contrasted with those of production, relatively less consideration has, on the whole, been given to intensive training in the merchandising field. Department stores have, of course, stood out in the development of training programs and a few nation-wide wholesale distributors have devised systematic plans for training their salesmen. It will be conceded, however, that the chains, in their attitude towards the adoption of standard practices in the broader field of personnel and human relations, have with a few exceptions, lagged behind. If a survey of the chain field were made, many operators would claim that they "have a training plan." Ask for details, however, and most of them would be forced to admit the absence of a definite, systematic, and standardized program supplemented by written manuals of procedure.

Many wide-spread organizations, among them some of the oldest, still cling for the most part to a "sink or swim" attitude with regard to their employees. New workers in such firms are usually hired and then left to work out their own salvation. A new and willing sales clerk put to work without adequate instruction or sympathetic understanding on the part of his manager frequently finds himself out of a job in a few days. A trainee placed under the first store manager who needs an assistant, without reference to the latter's ability as a trainer of men, is as likely to fail as to succeed. A common employer attitude with reference to men employed for prospective managership is expressed in the advice: "Work hard and some day you'll have a store of your own." A glowing description of opportunities for promotion is frequently directed at a new employee, but there is all too commonly no program specific enough to guarantee him the advancement to which he may well be entitled.

A TRAINING PLAN AS A BUILDER OF MEN

Few business leaders will deny that an outstanding task and obligation of industry is the building of men. The "new deal" in the power age involves the development of all-around and more effective personalities, the cultivation of judgment, initiative, and resourcefulness. The achievement of this objective necessitates personal development and education in the broader sense, in addition to the specialized processes of job instruction with which we are here concerned. It may be pertinent, bearing this objective in mind, to suggest that much of the criticism of big business grows out of the regimentation of human conduct which this type of organization inherently and unconsciously encourages. "Machines, robots, chain slaves, shoedogs," and other similar expressions are used all too frequently to express the belief that chain employment dehumanizes, that it neglects the social aim of building men of individuality and

character. Training programs of the right kind are a specific antidote to both labor propaganda and inherent potentialities of evil.

Some chain executives unfortunately fail to recognize that the building of men is not simply a matter of hard work and time spent on the job. Conditions today are quite different from the days when "the old man" opened his first store and made good by working eighteen hours a day. A chain executive of the self-made type certainly desires other outstanding men in his organization, but there is no logic in an entire organization made up of outstanding individualists like himself. The "average" man who finds work in a large and far-flung organization today, one in which standardization frequently tends to restrict initiative, needs systematic assistance to forge ahead as fast as the company would like to have him, to say nothing of his own desires. A garden plot, planted with the best of seeds, cannot be expected to produce strong, healthy plants and a large crop without intensive and scientific cultivation. Human beings starting on a new job require even more attention.

PRECISE TECHNIQUES NEEDED TO PRODUCE RESULTS

Just as there is need for the application of science in gardening, so there is a place for the science of education in the training of employees. A satisfactory training program needs to be developed scientifically, built up on a basis of specific facts and needs. The training program must be definitely planned, actual training must be undertaken on an experimental basis and the best procedures ascertained, the plan must be followed up systematically, and operating supervisors must be trained to teach their subordinates. The man heading the training activity should understand the principles of pedagogy—a type of knowledge quite different from that of merchandising or office management. In the absence of an organized training program based on sound teaching and psychological concepts, the new employee is subjected too largely to chance and invited to lift himself by his boot straps.

If the present status of training among wide-spread organizations is examined with reference to any specific company, let the executive ask himself the following questions: Has my training program definitely shortened the period required to learn the job? Has it enabled my employees to increase their earnings? Has it decreased expense? Has it decreased labor turnover? Has it improved sales volume and service? Are the workers better, happier members of society than they were? Is my training program as specifically written up as, for example, my store operating instructions? These questions are, after all, the tests by which the success or failure of any training program must be evaluated. Unless an executive can give an affirmative answer to most of them, his alleged "training program" may perhaps be suspect.

THE RELATIONSHIP OF SELECTION STANDARDS

In evaluating the success of any training plan, it is important also to bear in mind the type of employees recruited. A more intelligent worker or one with a better background of ex-

perience will obviously be more easily trained and more likely to succeed. Improved methods of selection should go hand in hand with the inauguration of training procedures. To quote from "Industrial Discipline" by Professor Tugwell of Columbia: "When there is no attempt to predict the success of job applicants through precise selection, many inefficient ones must be tried and weeded out. This is costly both for industry and the individual. The industry has lost the difference between the efficiency of a good man and the inefficiency of a poor one. It has also wasted time and money in his training; and the employee has lost the time which might have been spent in getting started at a more fitting task and has suffered the humiliation of failure and discharge." Improved selection can do much, but the best of raw material may be spoiled in the processing.

SUPPLEMENTARY TRAINING IN BUSINESS MANAGEMENT

Many firms (largely outside the chain field) are engaged in general educational activity or Americanization programs and offer courses of study of a cultural nature, frequently in conjunction with schools and colleges. The present discussion, however, centers on training as a learning process of value in meeting definite commercial situations and in assisting employees to acquire skill in the specific operations of a given business enterprise. Such specialized training may be supplemented by a few subjects of a more general nature commonly taught to good advantage in a training program. Among these are the history, financial position and organization structure of the company; its competitive position in the field; information regarding the source and processing of merchandise; inspection, packing and distribution of products; public relations; psychology of salesmanship; advertising methods and policies; and uses to which a line of company products may be put. Education of this kind is of course definitely effective in developing an appreciation of basic economic principles and an understanding of the fundamentals of business management.

A prerequisite to a satisfactory training program for the development of job skills is the preparation of manuals of standard practice and written job analyses. Insofar as possible, all standard operating procedures should be reduced to writing for ready reference in connection with training and management. Nearly all chain organizations have their operating manuals, but few have developed detailed manuals for sales clerks, stock men, and other types of employees. Many firms issue a brief handbook of general information to incoming employees explaining the company's policies and outlining in a general way the steps in the company's training plan. These may hardly be termed "standard practice manuals," however.

GEOGRAPHIC AND OTHER FACTORS DETERMINE THE PLAN SELECTED

Specific types of training programs used with success by chain stores or large distributing organizations vary widely. The selection of the particular plan or procedure is usually dependent upon the geographical distribution

of the operating units involved. No specific plan can be transplanted bodily from one kind of firm to another aside from the fact that each company has its own peculiar problems. The training plan of a company with a large number of branches located in metropolitan centers must necessarily be quite different from that of an organization spread half way across the continent with isolated units in a large number of small towns. The caliber or type of men or women to be trained is another important consideration. It is apparent that the same program will not be appropriate for the training of service station attendants employed by an oil company and for the development of men in training for managership in a department store chain.

A plan for the intensive training of college graduates, an increasing number of whom are proving their worth in the chain field, again requires a special type of approach. Methods of training selected must also take into consideration the hours of work. A training schedule cannot be too burdensome in case a great deal of night work is involved in the daily job. In New York City, for example, most outlying chain stores (except food stores) are open six nights a week. It is, therefore, difficult to schedule training classes during working hours without a more or less involved system of relief. The training problem in any far-flung organization is more complex than that which may be set up for a single department store or factory.

The size of the organization and the number of units operated naturally affect the training need, the amount of money which can be appropriated for training, and the scope of the program set up. No matter how small the firm, however, there is still need for some kind of specific plan for training employees. The plan should be put in writing and systematically administered under the supervision of the personnel manager or some qualified person in the operating department.

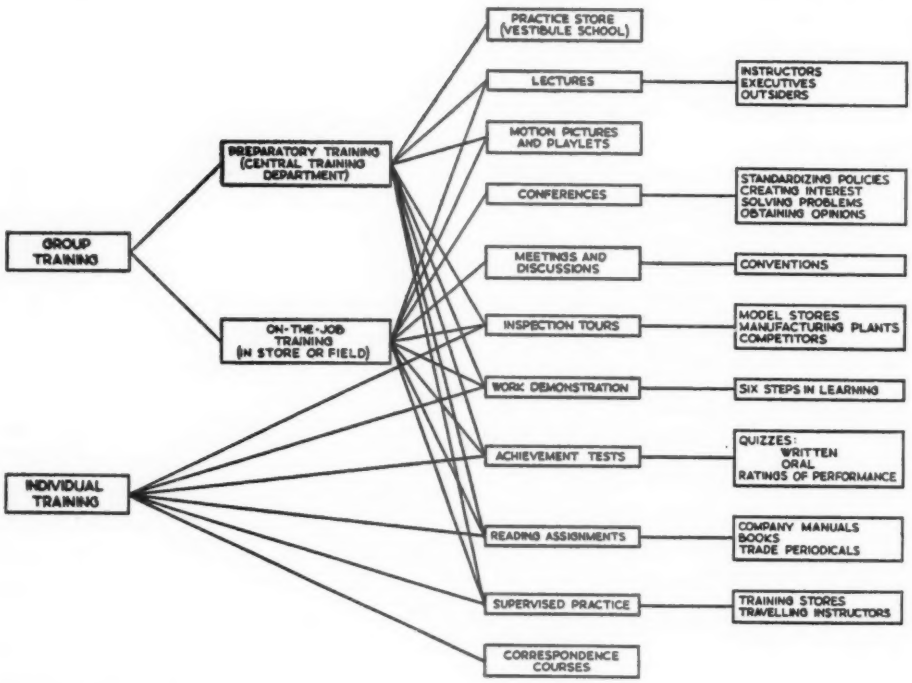
GROUP OR INDIVIDUAL TRAINING? WHO SHALL BE TRAINED?

The two major categories into which training programs may be divided are those which provide for group training and those which must rely upon individual instruction. The two necessarily overlap to some extent in practice. A chain with a number of units in metropolitan centers may employ a plan of group instruction for its trainees in those centers and rely upon individual instruction, in part through correspondence, for trainees stationed in remote territory. Either group or individual methods may be used for breaking in new employees or for furthering the development of experienced workers. Far more attention has of course been given to the training of new employees, but in many organizations it is quite as important to conduct a continuous program of education for old employees in order that they may keep abreast of the times.

If it is desired to conduct a training course for a group of experienced employees, who should be privileged to participate? In general it may be said that any employee in the work group who is sufficiently interested in the company's welfare to improve his knowledge and skill should be ad-

mitted to the training class. In some situations, however, it may be imperative to restrict the size of the group because of practical considerations—either by choosing those who appear to have the best chances of benefiting by the course and of advancing with the organization, or, perhaps, by selecting those in greatest need of additional training. If a selection must be made, it is usually inadequate to base the choice solely upon sales or production records: the use of a reliable employee rating scale is desirable. In the case of a local chain desiring to inaugurate an advanced course in merchandising for those managers and clerks regarded as potential executive material, a special rating scale was devised. This scale rated the candidates on thirteen traits, including such factors as speed of mental reaction, ease of learning new tasks, understanding of directions, accuracy in sizing up situations, teamwork, etc. From a tentative list of fifty possible students, the highest fifteen were then enrolled.

EMPLOYEE · TRAINING METHODS IN THE CHAIN FIELD



SPECIFIC METHODS IN USE

The remainder of this review will concern itself with a brief discussion of specific types of procedure used by representative chains throughout the country. Most of the programs which are in effect deal with the training of student managers, since it is here that the greatest training need has been felt.

Reference to the accompanying chart will reveal training methods which have been used with more or less success in meeting both centralized and decentralized situations. Both group training and individual training procedures are shown, while some are suitable to either type of instruction. Nearly all comprehensive training plans combine two or three of the methods shown. Let us consider each method in turn, note briefly its important essentials and see in what kind of situation it has been applied effectively.

The practice store

The practice or model store was one of the earliest types of training to which attention was directed, largely because of the success of the "vestibule school" in manufacturing industries. The vestibule school, as its name implies, was a small section of a factory set aside to train workers in specific mechanical processes under special supervision before they were assigned to production. Attempts have been made to apply this idea to the chain grocery field, and in some cases practice stores were set up in the warehouse for the pre-training of student managers. Although certain facts can be learned about merchandise and store keeping in this way, such an expedient is so artificial that, removed from the customer environment, the practice store of this type is of little practical value.

The principle of preliminary instruction in groups has been applied effectively in large department stores for the training of sales clerks and to the training of extra help in metropolitan chains, but here the instruction is largely of the lecture type. The instruction furnished in such classes has been confined for the most part to procedures involved in filling out sales slips, credit memoranda, and other operating forms. Considerable success has been achieved by chains in designating certain stores as training stores, but these are operating units and not exclusively training centers. They are considered under "Supervised Practice."

The lecture method

The plan of having a company executive, an instructor, or an outsider give talks on specific topics before meetings of employees is one of the oldest training methods. This procedure is open to the general criticism directed at any lecture, that those in attendance remember very little of what is said. The speaker's delivery may be poor, the material badly organized, or there may be a failure to make the topic interesting enough. In consequence it does not "get across." Every executive will recall talks given on the selling floor by executives, section managers, stylists, or specialists, which have not succeeded in their purpose.

Even though the lecture method of presentation has its short-comings, it is of definite value in placing certain facts or propaganda before large groups of employees, particularly in connection with sales talks of inspirational value. The lecture method must also be used in group instruction of beginners to whom it is desired to convey certain factual information. Useful and interesting talks have been

given, for example, to groups of food chain employees by specialists of various kinds, executives from the production departments, bakers, coffee roasters, produce men, and dieticians. The lecture plan has also been used with success in the variety and drug fields. When supplemented by other forms of instruction and carefully planned, it has its place in a training program.

The conference method

No method of instruction has been used to a greater extent than what is loosely called the conference method. The technique of the true "conference" is quite different from that employed in the lecture or informal group discussion. A properly planned conference involves organized discussion and is an exercise in concerted thinking. It requires an honest effort on the part of a relatively small group of persons who get together to exchange ideas in the attempt to arrive at an opinion or decision which cannot be reached readily by the members of the group individually. Manufacturing organizations have used this method for many years in training foremen.

The conference method is suitable for a number of objectives. It can be used to solve a problem and decide on a suitable course of procedure, to ascertain a trend of thought in a given field, to create interest in a given subject, or to create and maintain uniformity of interpretation of policies or principles. Results cannot be expected if more than 15 or 20 persons are in attendance. This method is obviously not adequate for the training of student managers or those new to the operation of the company. Its usefulness is restricted to meetings of experienced workers, more especially executives or supervisors.

At first glance, it would appear that anyone could organize a successful conference, but success depends upon many factors. The facts to be considered have been ably summarized by Mr. A. B. Gates of the Eastman Kodak Company as follows: (1) the conference must have a well defined purpose or objective; (2) the conference must involve discussion material within the experience and knowledge of the participants; (3) the conference must be planned; (4) the conference must be so led as to secure constructive participation and to keep the discussion on the subject in line; (5) the conference must reach its objective; (6) finally, if benefits are to be derived, results must be developed and summarized so that they can be utilized. It is all-important to secure the right leader, and a conference leader requires considerable training in technique.

An important aspect of conferences is their influence on morale. Employees given an opportunity to express their opinion in a conference are definitely stimulated to greater effort in consequence. Participation in a conference engenders a wholesome feeling of participation in management which is beneficial to any organization.

The conference method as a means of entertaining trends of thought and of consolidating an organization behind a new idea has been widely used in sales meetings and in meetings of executives where questions of policy are discussed. It has been used to a

lesser extent but with definite success in the training of chain store managers.

In the case of a large grocery chain, the fifteen or twenty managers under each supervisor were brought together every two weeks after hours. Each meeting was devoted to a discussion of a specific topic, such as planning the work of the store, history and development of the chain idea, displays, ordering merchandise for the store, rotating stock, retail balance, eliminating shrinkage, controlling produce losses, getting the most out of the company's advertising, etc. The supervisor was provided with a concise written outline and guide for conducting each meeting, but each man present was expected to participate in the discussion and contribute his ideas. The discussion was definitely guided to a conclusion which was supported by all members of the group. In order that each manager might be in a position to refresh his memory regarding the discussion, he was supplied, at the close of each meeting, with mimeographed notes covering the important items of discussion.

The procedure described in the foregoing paragraph may be termed a "controlled" type of conference. Its general effectiveness is as definite as in the conference in which each member of the group has a voice in determining the decision reached. In the foregoing illustration, the material supplied the supervisors and managers was carefully developed in advance through experimental conferences with other groups. Each preliminary group arrived at the same conclusions, since the topics discussed concerned themselves not with major policies, but with the best methods of handling a specific store operating job.

Such a specialized type of conference procedure is of great value in "getting over" to an organization a special sales campaign or sales drive. In one instance it was found possible through such stimulation to dispose of six cars of citrus fruit and permanently to increase the sales of that item in a district which had never sold much fruit before. In another case, it was found that the average sales per store increased by as much as 70 per cent in the course of organized conferences. The conference method offers attractive opportunities for results, but involves technical operating difficulties not apparent on the surface. It needs skillful and experienced direction.

Meetings and discussions

Group meetings and informal discussions of operating problems are common in nearly every business organization where a sufficient number of the employees concerned can be brought together at any one time. Large sales distributing organizations as well as certain chains are accustomed to bring their salesmen together once or twice a year in conventions. In the ordinary type of meeting it is common to discuss a considerable number of different topics and to conduct the proceedings in an informal manner. This serves to distinguish the meeting as a training method from the true conference which should be restricted to a single topic and the procedure for which should be definitely planned and controlled.

The branch managers of any widespread firm would be greatly benefited

by further opportunities for contact with one another, although many chain operators, without appreciating its effect on *esprit de corps*, ruthlessly discourage such intercourse. Meetings as a part of training have been restricted for the most part to chains with a number of stores in metropolitan centers, the managers of which are brought together every week or two at headquarters. Combined business and social gatherings have been used in some instances but ordinarily not much real instruction can be imparted at such affairs even though entertainment features may bring out a large attendance.

Motion pictures and playlets

Potentially there is probably no more valuable agency for use in training employees than the motion picture. Most of us are eye-minded, and we learn far more readily by seeing the details of our daily task on the screen than we can by hearing them discussed by a speaker or even by reading about them on a printed page. Not only can a job be systematically broken down and analyzed in motion pictures, but a vast store of other practical information can be imparted in this way. A motion picture designed to supply instruction for shoe salesmen on orthopedics and another demonstrating the process of tanning leather and manufacturing shoes would be of great value. Pictures showing the source of coffee, tea, spices, cocoanuts, fruits, vegetables and cereals would be most helpful in grocery training. There are unquestioned possibilities in training sales clerks in methods of approaching and dealing with their customers.

The main obstacle to the adoption of the motion picture as a commonly accepted training medium is the cost of producing the films. Ordinarily each company must prepare its own special film, though there is no reason why a number of firms in different territories should not cooperate. Unless an organization is large, has a considerable training problem, and can bring together in convenient locations the employees that need to be trained, the expense of producing special films is prohibitive.

Nation-wide sales organizations are making increasing use of training films. A large soap manufacturing firm has met with considerable success in coaching its salesmen in the work of assisting retail dealers. Automobile sales organizations have nearly all, at one time or another, made use of talking pictures. The film has been especially popular in bringing the picture and voice of the head of the organization to members of organizations so widespread that it would otherwise be impossible for the employees to see him in person. Such films have been largely inspirational in their nature.

Another useful device in visual training is an improvement upon the old magic lantern by which photographs, charts, or printed matter are thrown from a slide onto a screen. These slides are an invaluable adjunct in the lecture type of training.

In some chain organizations occasional use has been made of the playlet or sketch illustrating certain problems with which employees are confronted.

As an occasional interest rouser, this method has its use, but it is seriously limited by the amount of time involved in preparation and the ever present possibility of a poor performance on the part of inadequate performers.

Work demonstration

A specific plan for demonstrating the steps or processes involved in the work content of a given job is essential to any training program. Demonstrations of actual job situations, involving the handling of merchandise, equipment, or tools, may be staged before a group of employees undergoing preliminary training more economically than in individual training. Information supplied in the course of lectures, such as that indicating the filling out of sales checks or order forms, for example, or the procedure involved in refunds or similar tasks must be reinforced by actual detailed demonstration. Successful demonstration includes a great deal more than the ordinary practice of "picking up a job" by watching someone who himself absorbed it in that way from his predecessor.

Demonstration is only one of the factors in the training-on-the-job situation. Six steps are involved in teaching a learner to perform a given task. (1) The trainer should first perform the operation, explain the process or go over the sales talk, making sure that the explanation is simple. Only a small assignment should be learned at one time. (2) The learner should next repeat the work which he has seen demonstrated. (3) Next, the trainer should criticise the learner's attempt, emphasizing the right way without unduly stressing the wrong way. (4) After this, the learner should again repeat the training assignment. (5) Successive repetition of these steps should be carried on until satisfactory results are obtained. (6) Finally it is essential for the trainer to follow up the work of the trainee from time to time. Every supervisor engaged in training should understand thoroughly the principles involved in the learning process. He should be friendly and patient and above all, he must "follow through." Observance of the foregoing points will eliminate many failures and will make it impossible for a beginner who has failed, to say: "Well, all the boss did was to give me an apron and tell me to get to work."

Inspection tours

Visits of inspection to headquarters offices, warehouses, model stores, or manufacturing plants are a valuable adjunct to a training program. Ordinarily such tours should be conducted in small groups and even though a group training plan is not primarily employed, it is frequently possible to bring learners together for trips of this kind. The beginner who has an opportunity to go through the main or branch office of his firm with a guide who can explain the various departments and operations is greatly benefited. It is particularly helpful if the "big bosses" are on hand with a friendly word. If the company is engaged in manufacturing or processing, an inspection of the production, shipping, warehousing, or other methods

used helps to sell him on the product. Employees of food or restaurant chains may be taken to the bakeries and other production units. Every chain has a number of model establishments to which it points with pride; visits to them by learners can be made both useful and stimulating. A number of chains in various fields have adopted the policy of having groups of managers make periodic inspection trips to certain of their stores.

Supervised practice

The plan of assigning learners to one of a number of specially selected operating units, designated as training centers, is the one most commonly found in the chain field. The effectiveness of this training method, however, varies widely both among and within the chains. It is not sufficient to assign a trainee to a store operated by a successful manager of long experience; while he may be a satisfactory operator, he may be utterly incompetent to train and develop learners. Organizations which have embarked on systematic training programs have found that only a small part of their supervisors are qualified to do a good training job. The training store manager needs first of all to be trained for that work. Since it is common economy to employ trainees on routine store operating work at the same time they are obtaining their training, a considerable number of beginners must necessarily be assigned at times to stores which are really not training centers. This emphasizes the importance of rotating trainees among various units so that during at least a part of their training they will receive proper instruction. The earlier in the course of their employment they are placed under a good training supervisor, the better. In order to offset the incompetence of certain managers as trainers a few chains employ training supervisors or travelling instructors who supply the gap in the learner's training program resulting from this fact. Junior department store chains successfully employ women instructors who travel from store to store as needed, to train sales clerks and cashiers. The depression has demonstrated that this practice is too costly in a period of slack sales, however.

Certain large firms in the grocery, restaurant, shoe, and variety lines have adopted a systematic plan of centering their training activities in selected training stores. In metropolitan centers this method is sometimes supplemented by group training and classroom instruction.

Rather remarkable results have been achieved in some instances in shortening the length of the training period through standardized practice training supervised by a central training department. The development of such a plan, however, involves considerable research work, the preparation of specific plans and schedules, and of written outlines. One well known chain now turns out successful meat cutters in sixteen weeks' time, a project which would have been ridiculed by almost any butcher a few years ago. Of these sixteen weeks, twenty-nine days are spent in the class room and sixty-nine in the markets.

The size of each training class is limited to twenty; the school is located in branch packing plants where a course of group instruction is conducted on certain days during the training period. A training certificate is awarded to the apprentices who successfully complete the required course of study. In order to assist in overcoming the numerous obstacles involved in training a group of managers qualified for instruction work, the training department of this company has prepared very comprehensive instructor outlines including extensive analyses of the job processes involved.

Another interesting training venture undertaken by a grocery chain involves the training of learners for store management in the course of a ten weeks' training program, even though they may not have previously engaged in the grocery business. This program provides little group instruction, but relies upon supervised practice in selected training centers, supplemented by precise training manuals. In the course of the ten weeks, attention is directed to the following topics in the order listed: introduction to store and stock; preliminary selling instruction; maintaining good store conditions; ordering and receiving merchandise; merchandise information; sales, displays, and advertising; records, reports, and accounting; ordering, handling, and selling produce; and the manager's place in the community and company. Following the completion of systematic basic training, a student manager is given an opportunity to serve as acting manager in a store in which the regular manager acts the part of supervisor for the week. Here the student's ability is tested and misunderstandings are uncovered.

Certain variety and restaurant chains have used the plan of sending out trainees for a final training period of one or two months to larger stores which serve as major training centers. The managers of these units, in consideration of the extra help thus provided, are expected to make sure that each student manager has learned all phases of the company's store operations. They have considerable to say regarding the trainee's fitness and readiness to operate a store of his own.

Reading assignments

A customary assignment for learners in every chain or large distributing organization is the careful reading of the company's operating manuals and of general orders, bulletins and sales promotion circulars issued from headquarters. It is important that material of this kind be systematically routed to trainees, and a definite plan for studying the material must be outlined. Store manuals, especially if mimeographed, frequently number several hundred pages. They are usually inadequately indexed and the mere reading of page after page, without systematic study, results in confusion. Preliminary training material sent to the learner should give him specific advice and suggestions on how to study and how to remember what he has read. In some instances useful training material has been distributed through company magazines. This may, of course, give publicity to some

of the company's confidential policies and is subject to the further criticism that such material is frequently not kept for permanent reference use. To be of value to subsequent trainees, reprints must be preserved.

Increasing attention is given by a few chains to supplementary reading of general value in developing a trainee's understanding of business management, merchandising principles, and personnel procedures. The trainee's manual of one chain requires as a qualification for managership, that at least five recommended books be read in the course of training. A bibliography of several pages from which the student may make a selection is incorporated in this trainee manual. Since few of the books listed are found in small town libraries, the company mails volumes as required from its own reference library. The supplementary readings deal with store keeping, with the fundamentals of marketing, merchandising, and displays, and with the development of personality and personal leadership in business. The importance of such reading (particularly in a time of economic change) in broadening the knowledge and vision of outstanding younger men cannot be overestimated.

Correspondence training

The most difficult of all training situations is doubtless found in the widely scattered chain where ordinary group instruction is a physical impossibility, where preliminary or prejob training is impracticable, and where even supervised practice—because of inequalities in training capacity among the managers—offers many difficulties. In such a situation it is feasible to develop a carefully devised plan of training largely by correspondence, somewhat along the lines of the courses offered by various correspondence schools. The problem of teaching by correspondence is complicated in some organizations by the fact that trainees of various degrees of experience are employed. These may, therefore, qualify for management in from three months to three years, depending upon their previous experience. Accordingly the training plan must be sufficiently flexible to permit those of some past experience to take it up at the desirable point.

Although a number of firms have for many years employed what might at first thought be termed correspondence methods, most of these plans are neither exact nor comprehensive enough to be so entitled. As far as is known, there is no chain which has in effect a long distance training program comparable in form and content with any of the extension courses offered by leading universities or with the material used by the better class of correspondence schools.

At least one company, however, is developing a systematic training plan which will in time make such a comparison possible. Good results in the form of reduced turnover, better satisfied trainees, and better trained managers are already in evidence after less than three years' operation of this training program. The plan involves the following essentials:

1. Systematic study of operating manuals of the company, such as the store managers' manual, a stockman's manual, sales clerk's manual, and a superintendent's

manual. These give a detailed description of company operations and serve as the basic textbooks for the course.

2. Each trainee understands that he is expected, on the basis of his past experience and other qualifications, to be ready for store management within a certain specified time. This period varies for different trainees. He is then supplied with a definite training schedule which sets forth in detail how many weeks or months he must spend on each type of store work, stock room, sales floor, office, displays, etc. If a trainee fails to make the progress expected or does not keep abreast of his schedule he is either required to take a longer period or is dismissed.

3. Each learner is supplied with a trainee's manual prescribing the various tasks he must learn, the form of reports required and supplementary reading references required. This manual is in no sense an operating manual: it merely furnishes the trainee with systematic information as to how he may get the facts and experience required in the course of his training.

4. From time to time as the learner completes various steps in his training, tests are sent out from the headquarters training department which definitely measure his information regarding the company's policies and procedures. These tests are not of the old-fashioned "free answer" type of questions, but of the modern "short answer" form which uses the true-false or multiple choice types of response. The short answer type of examination is now extensively used in schools and colleges because it is exact; the answer is either right or wrong and the tests are quickly scored.

5. Additional reports in memorandum or essay form are required of trainees, such as assignment consisting, for example, of a request for suggestions for increasing sales in a specified store.

6. Periodic ratings on all trainees are sent in by managers on a specific and objective service rating form supplied by the training department. The ratings are scored at headquarters and the ratings (and test scores mentioned above) entered on an individual record card for each trainee. Certified reports of work performed, number of weeks on a given activity, number of windows trimmed, etc., are sent in by each trainee on standard forms. There are thus three definite means of checking up on a student's progress: ratings, tests, and progress reports.

A somewhat similar but less specific program has been evolved by a company operating a large number of personal loan offices throughout the country.

The training problem in an organization in which the units are not generally standardized necessitates individualized attention on the part of a training instructor or an operating executive. This is the case, for example, in an organization of junior department stores in which the departments vary considerably from store to store, and in an organization which is perhaps little more than a holding company or buying agency for a group of units operating under a common name. Even with the individualized requirements of such a situation, it is desirable to reduce to writing as much as possible of the standard practice common to all units, and to standardize routine operating procedures to some extent so that employees may not be confronted with an entirely different system in the event of transfer.

In simpler types of jobs in organizations operating on a chain basis it has been found adequate to supply each trainee with a copy of a training pamphlet and supplement this by personal inspection on the part of a travelling supervisor. One of the finest illustrations of this type of material is an illustrated handbook for the guidance of service station attendants in a large oil company.

Examinations and quizzes

Any satisfactory training program involves the employment of precise techniques for measuring the knowledge and skill acquired by trainees. Most organizations have contented themselves with a routine written or oral quiz at the end of the training period. It is quite as important, however, to check up on the progress made as training proceeds. Such a checkup can be made most effectively by using short answer test material as suggested above. Written tests, since they take less time on the part of training executives, are to be preferred to oral interviews, except for appraising a prospective manager's personality. The formalizing of examination procedure is frequently of great value in a training program because it prompts the trainees to master the subject matter and stimulates competition among them.

A WORD OF SUMMARY

The brief survey which has been made of training methods as applied to wide-spread organizations will indicate the existence of substantial interest in training procedures on the part of many firms, but may also suggest the need for specialized and technically sound methods. Earlier conceptions of training as a vague process of experimentation, of "hit-or-miss" methods or inspired "hunches," are apparently giving way slowly to the scientific method. Job analysis, systematic planning and scheduling, and greater precision in the preparation of training text material are becoming more common. Employee training in decentralized firms appears to have passed out of the fad stage and, with the added impetus of the N. R. A. codes, should find its place as one of the essential components of scientific management.

What Do You Think of the Personnel Department?

By Harold V. Gaskill, *Iowa State College*

Data collected from 430 employee interviews reveal no widespread distrust of personnel departments. Confidence in the work of such departments was expressed by about three-fourths of those interviewed although personnel work and "efficiency" work were believed to be the same thing by 83 per cent of the group. Accuracy of notions regarding what a personnel department does seemed independent of actual experience with such departments.

YOU can't trust this personnel outfit. They've got those nurses snoopin' around checking up on you every time you're at home sick. Once after an Armistice Day celebration, one of the boys just wasn't up to par the next day and his wife called in to say he wouldn't be down to work. Within half an hour a nurse was calling on him to see if he really was sick, or if he had just been on a little spree. No sir, I won't cooperate with that department. We tell 'em we do, but actually we don't." Unfortunately, this is a true record of a statement made to the investigator—and still more unfortunately, this statement was made by an assistant manager of a department in a large retail store having a very efficient personnel department. Is the opinion voiced by this man typical of employees generally?

To determine the extent and degree of distrust of personnel departments, we interviewed employees of several types of organizations. Incidentally, during these interviews other information was obtained which is presented here.

A standard interview blank was used by all interviewers, some of whom were the writer's students.[1] All interviewees, regardless of apparent qualifications, were asked to express an opinion about the value and functions of personnel departments. Loquacious individuals were given free rein. In most cases information was sought "among friends," and in that spirit given unreservedly,—the high degree of rapport between interviewer and employee contributing to the validity of the data.

The persons interviewed and organizations represented present a unique array. We selected organizations to which we had entrée. Quite naturally, such a basis of selection would not be expected to give a random, unbiased sample; hence our results cannot be

[1] The writer wishes to acknowledge the excellent work of the late Martin Meehan, a former student, who conducted many of the interviews and who aided in the compilation of data.

taken as statistically valid conclusions. The number of persons questioned in some organizations does not represent 1 per cent of the employees. In other instances, only the employees of one department were questioned, and in still others, the entire personnel, from the president and directorate down, was interviewed.

The geographical distribution of the sources of information is a good match for the heterogeneity of persons interviewed. Four towns with populations under 1,000 in Iowa, Nebraska and Missouri are represented. Several mid-western and western towns of 15,000 to 20,000 population are on the list, including Chicago, Des Moines, Omaha, Denver, and Seattle.

The number of usable interviews is 430, twenty-seven being discarded because of the person's inability to understand the questions, because he was a casual employee, and for similar reasons. These are, of course, too few expressions of opinion to warrant sweeping generalizations, but in many instances the percentage of employees questioned in each department is certainly adequate for a conclusion about that organization at least. For the general trends, all of the interviews are considered together, regardless of organization or locality, as our interest was primarily in the employee's estimate of personnel work.

RESULTS

First we tabulated information about the interviewees, in order to get a picture of the character of the group. Sixty-four per cent were over 35 years of age. A great variety of occupations was represented. These may be classified as follows: skilled workers, 30 per cent; salesmen, 30 per cent; clerical, 21 per cent; managers and supervisors, 11 per cent; miscellaneous, 8 per cent. Slightly more than half of the workers were employed by concerns which had no personnel department.

These men expressed their opinions concerning personnel departments by answering a variety of questions. Answers to these questions can be presented most concisely in a *yes–no* tabular form (table 1).

All of the above questions, except the last, are adequately answered by 'yes' or 'no.' Some other types of questions appeared at random among the "*yes–no*" questions. This intermixing served two purposes: (1) to relieve the rather mechanical situation arising from questions answerable by a single word, and (2) to give the persons being interviewed an opportunity to go more into detail if they desired. Of these other types of questions, some were inserted purely as "shock absorber" items, to improve the rapport between interviewer and employee.

Among these non-specific questions were: Do you know any men connected with a personnel department? Are these men leaders or are they drivers? Do you think personnel work will continue to grow? Do you think men are better fitted to a job in an industry where there is a personnel department? Do you think that some personnel departments do not do personnel work? Do you think that industry, as a whole, has personnel departments just for advertising purposes? Are personnel departments of any value? Do most department

stores in your community have personnel departments? In stores where there is a personnel department, do most of the clerks seem pleasant? Efficient? Although many of these could have been answered by 'yes' or 'no', the employee was urged to elaborate.

Some of the questions not answerable by one word are genuinely significant. One is: What is your notion of a personnel department? This was designed to get the individual to tell just what he thought the work of a personnel department comprised. The trend of answers to this question indicates that there is no significant difference in accuracy between the notions expressed by workers in an organization which *has* a personnel department and those who work in plants which do *not* have such depart-

TABLE 1

QUESTION	PER CENT ANSWERING	
	Yes	No
Do you believe personnel departments do only the hiring and discharging of employees?	48	52
Do you think these departments help promotion?	74	26
Do you think these departments hinder promotion?	11	89
Do you believe personnel departments do have or should have contact with an employee in all his work?	47	53
Do personnel departments fit a man "to" his job?	31	69
Do most industries in your community have personnel departments?	44	56
Is there a general feeling of satisfaction on the part of the employees in organizations in which there is a personnel department?	38	12
	(50 no answer)	
Do you believe personnel departments reduce labor turnover?	72	28
Do you think mental tests are of any value in industry?	86	14
Is it hard to become acquainted with a personnel interviewer?	6	45
	(49 no answer)	
Do you think personnel departments are necessary for personal contact between the management and the employees?	69	17
	(14 indifferent)	
Do you have any confidence in personnel departments?	74	9
	(17 "can't say")	
Are personnel departments good 'advertising' for the company?	71	29
Do you believe personnel work and 'efficiency' work to be closely related?	83	14
	(3 no answer)	

How many employees (*minimum number*) do you think an individual plant, store, factory, business house, etc. should have to warrant a personnel department?

	Few	25	50	100	150	200	250	400	No answer
Per cent	2	11	12	24	9	4	2	2	32

ments. Apparently the presence of a personnel department is no assurance that employees in general will have exact or reasonably clear notions regarding its functions.

As the reader has undoubtedly observed, some of the questions are designed, in part, to check information given earlier. Thus, discrepancies and insincere information might be brought to light, while an opportunity is offered for further enlarging upon points made earlier. For example, fifty-seven men worked where there was no personnel department, where most industries in their community did not have such departments, had never visited a plant in which there existed such a department and knew no one connected with a personnel department; yet eleven had very elaborate notions of the functions of personnel departments. Strangely, six of these eleven descriptions were most intelligent and accurate in many details. The probable explanation is reading. One answer indicates very specific and well selected reading. I quote that answer to illustrate, (Of what benefit do you believe personnel work to be?) *Ans:* "Greater efficiency through the individual's being placed in the line he is adapted to and a better morale in the entire force of employees." Not all of these eleven answers, however, are so accurate. Another, from among the 57 under discussion, at the other extreme (same question as above) follows. *Ans:* "Not a darned bit. We have so many things to donate money to now that pretty soon all I'll get on pay day will be the empty envelope. Too many do-dads anyhow. That's what's wrong with us today. If it ain't Safety First its Red Cross. And now its 'persynell.' We don't need none of 'em, and I won't spend a cent for 'em."

SUMMARY

The attitude of distrust, as expressed by an employee in a casual interview was not typical of opinions of those interviewed later. The number of accurate notions regarding personnel work is surprisingly high—occurring about as frequently in organizations having a personnel department as in organizations which have no such departments. Confidence in the work of personnel departments was expressed by about three-fourths of the persons interviewed. Nine per cent, quite definitely, had no confidence. Personnel work and "efficiency" work are believed to be the same thing by eighty-three per cent of the interviewees. Bad effects of personnel departments, as judged by employees, are totally insignificant.

Vocational Satisfaction of Stanford Graduates

By C. Gilbert Wrenn, *Stanford University*

The desirability of judicious and informed occupational planning by college students is emphasized afresh by Dr. Wrenn's analysis.

Of 2,424 Stanford University alumni selected as a sampling of the total thirteen-odd thousand, 19 per cent would not re-select their present vocation. This representation of vocational dissatisfaction spreads over 71 of the 91 vocational fields in which members of the total group engage. The data indicate that the professions suffer fully as heavily as do the business occupations. Vocational satisfaction is found to be more closely related to the consistency of the vocational choice made in college than to the occupation chosen.

"WOULD you re-select your present vocation?" Nineteen per cent of the Stanford University alumni say "No!"

The responses of 2,424 Stanford graduates[1] were studied in securing this statement of vocational dissatisfaction. A wide spread of vocations is found among the dissatisfied alumni, the 460 who wish they had not chosen their present vocation representing 71 of the 91 vocational fields in which the total group engages. Does this spread of dissatisfaction over such a wide range of vocations indicate that the individual is the deciding factor rather than the inherent disadvantages of any given vocation? This question should be held in mind while considering the data of succeeding paragraphs, data that emphasize the relative amount of dissatisfaction in specific vocations.

Table 1 lists the vocations represented by the dissatisfied alumni *for all vocations in which ten or more alumni engage.* The vocations are listed in order of the proportion of those dissatisfied to the total number answering. The data are given for the total of 3,021 men who were studied, those omitting an answer to this question being tabulated in a separate column.

Of the 460 dissatisfied alumni, 239 or 52 per cent are in the professions or other vocations demanding some focussing of college training. Table 1 includes twenty-one vocations in which

[1] A total of 4,230 graduates (3,021 men and 1,209 women) were selected for study as a sampling of the thirteen-odd thousand Stanford alumni, most of whom had responded to an alumni survey. The 2,424 men who responded to this particular question among others are the subjects of this brief report. Twenty-one basic tables of data are to be found in the Stanford University *Alumni Directory, 1891–1931*, Stanford University Press, 1931, pp. 1027–1034 (available also as a reprint).

TABLE 1

Vocations Represented by Ten or More Stanford Alumni, Ranked in Order of Proportion Dissatisfied

VOCATION	NUMBER ANSWERING "YES" TO QUESTION "WOULD YOU RE-SELECT YOUR PRESENT VOCATION?"	NUMBER ANSWERING "NO" TO QUESTION "WOULD YOU RE-SELECT YOUR PRESENT VOCATION?"	ANSWER OMITTED	TOTAL	PER CENT DISSATISFIED AMONG THOSE ANSWERING QUESTION
Office worker	13	14	4	31	51.8
Public service, politician	6	6	3	15	50.0
Accountant, C.P.A.	20	12	5	37	37.5
Specialty salesman	9	5	0	14	35.7
Petroleum engineer	10	5	2	17	33.3
Scientific Research	7	3	4	14	33.3
Agriculturalist	36	17	18	71	32.1
Salesman (misc.)	32	14	5	51	30.4
"Business"	60	24	15	99	28.6
Manufacturer	10	4	4	18	28.6
Banker, bankworker	53	20	7	80	27.4
Journalist	34	12	3	49	26.1
Mining engineer	32	11	8	51	25.6
Business manager	76	25	13	114	24.7
Office manager	29	9	5	43	23.7
"Engineer"	42	13	9	64	23.6
Geologist	66	19	4	89	22.3
Civil engineer	84	24	13	121	22.2
Mathematician	8	2	0	10	20.0
Secretarial worker	8	2	3	13	20.0
Chemist, chem. engineer	80	20	8	108	20.0
Teacher, below college	89	22	10	121	19.8
Mechanical engineer	81	20	7	108	19.8
Owner of business (misc.)	17	4	4	25	19.0
"Foreign trade"	9	2	2	13	18.2
Insurance broker, salesman	59	12	5	76	16.9
Electrical engineer	70	13	7	90	15.6
College or univ. teacher	102	17	17	136	14.3
Stock or bond broker	18	3	2	23	14.3
Realtor and R.E. salesman	32	5	8	45	13.5
Sales manager	27	4	0	31	12.9
Biologist	21	3	3	27	12.5
Minister	14	2	1	17	12.5
Army officer	9	1	1	11	10.0
Advertising worker	27	3	6	36	10.0
School administrator	50	5	6	61	9.1
Physician, surgeon	159	12	23	194	7.0
Lawyer	283	15	34	332	5.0
Total for these vocations	1,782	404	269	2,455	
Student	62	9	128	199	
Total for vocations represented by fewer than 10 alumni	120	47	200	367	
Grand Total	1,964	460	597	3,021	19.0

20 per cent or more of the alumni are dissatisfied. Of these nine are in the so-called professional class. It is a serious matter that proportionately so many alumni were allowed to take training in college for vocations which have aroused such an expression of dissatisfaction.

This study throws no light on the possible causes of this dissatisfaction, whether lack of ability, lack of fundamental interest, or personal maladjustment to the vocational environment. In any event more adequate self-analysis during the college period might have rendered dissatisfaction less prevalent. Temporary disappointment, overweening ambition and rationalization of an inferior level of achievement will always result in a certain amount of vocational grumbling. This is not to be taken too seriously; but the absolute rejection of the wisdom of an earlier choice is doubtless a graver matter and is indicative of actual vocational maladjustment.

It is interesting to note that business and the professions are about equally represented at both the top and the bottom of Table 1 (vocations containing both a large proportion and a small proportion of dissatisfied alumni). As many mining or civil engineers are dissatisfied as "business managers" or "office managers." Among those fairly high in satisfaction, "sales managers" and "advertising workers" rank along with biologists and ministers. However, the two vocations standing highest in vocational satisfaction, medicine and law, have the longest professional training. The amount of "weeding out" that takes place in the strenuous training for these professions evidently leaves a residue of individuals well adapted to the requirements of the vocation. Does this contain a clue for a college vocational guidance program involving other vocations?

A total of 82 per cent of the alumni are in the same vocation as that chosen in college or in one similar to it. This was ascertained by comparing answers to the two questions, "What is your present vocation?" and "What vocation did you choose in college?" After proper discount is made for unreliability, there is still significance in the fact that over four-fifths are in the vocation chosen in college. Considerable permanence value may be attached to the vocational decision made in college. Were these choices happy ones? Another comparison throws some light on this question.

A total of 84 per cent of those *in the same vocation as that chosen in college* expressed vocational satisfaction as against only 65 per cent of those *not* in the same vocation as that chosen in college. Expressed conversely, *there is twice as much vocational dissatisfaction among those who did not follow out their college decision as among those who are in the vocation decided upon when they were in college.*

A general conclusion to be drawn from this study is paradoxical. Vocations for which college gives training, the professions, rank high in proportion of those dissatisfied, and yet vocational choices made in college are fairly reliable and fairly valid. The training course itself, unless quite rigid as in medicine and law, does not weed out enough of those who later become vocationally maladjusted. The student may undergo training for a profession and yet lack the fundamental interests and personal qualities essen-

tial for vocational happiness. A further factor may consist of the nature of such professional training. In this connection Professor E. K. Strong has pointed out to the writer that training for medicine and law includes more elements analogous to later professional practice than does the training course for many other professions. More actual "job-elements" are provided, the medical student working with his anatomy and clinics, the law student with his cases. Such training programs act as important selection agencies in eliminating those whose performance or attitude does not indicate later vocational adjustment.

A college guidance program should include at least two much-needed points of emphasis: provision for all possible assistance to the student in the analysis and evaluation of his interests and traits, and the provision of "job in miniature," apprenticeship or other valid vocational experiences in the pre-professional training program. To provide the foundation of a *rounded* student personnel program there must be added to these points of emphasis, assistance in the establishment of efficient methods of study and working habits, and assistance in the development of an integrated and socially adjusted personality.

Unemployment In Buffalo And Lincoln 1932-1933

By Cleon O. Swayzee, *University of Nebraska*, and Frederick E. Croxton, *Columbia University*

Local data on unemployment, such as those here reported, should be gathered and analyzed in many centers, pending the time when the United States Department of Labor is in position to furnish detailed facts about unemployment currently.

IT IS no longer necessary to plead the value of accurate unemployment data. Relief agencies must have adequate information in regard to the nature and character of their problem, and bases are needed upon which to build a program of unemployment insurance. For the first of these uses the data must be promptly available, and while they are less urgently needed for the second use, they are none the less essential. Unfortunately, with few exceptions,[1] little attempt has been made to gather comprehensive and comparable data.

The material presented in these pages represents the results of unemployment surveys made in November, 1933, in two cities far apart geographically and greatly dissimilar in industrial composition. Buffalo, with almost 600,000 population, represents a highly industrialized center with much heavy manufacturing. Lincoln, a mid-western city of about 80,000 population, is located in an agricultural community and has little manufacturing. Accompanying the 1933 figures are presented comparable data for studies made in the same cities during November 1932.[2]

In both cities the same methods were used and the data were collected at very nearly the same time. In neither Lincoln nor Buffalo was it possible to include the entire population in the studies; consequently, a limited number of areas were chosen for study in each city—great care being taken to secure good samples, both as to industry and nativity distribution. The

[1] See *Unemployment in Columbus, Ohio, 1921 to 1925*, by Frederick E. Croxton, Bulletin 409, U. S. Bureau of Labor Statistics; *Unemployment in Buffalo, November, 1932*, by Frederick E. Croxton, Special Bulletin 179, Div. of Statistics and Information, N. Y. State Dept. of Labor; *Unemployment in Syracuse, November 1931*, by John N. Webb, Special Bulletin 173, Div. of Statistics and Information, N. Y. Dept. of Labor; *Unemployment in Lincoln, Neb., November 1932* and *Unemployment in Lincoln, Neb., November 1933*, by Cleon O. Swayzee, Univ. of Nebraska Studies in Business, No's. 33 and 34.

[2] For further 1932 results, see Croxton and Swayzee, *Measuring Unemployment in Buffalo and Lincoln*, *Personnel Journal*, vol. 12, June, 1933, pp. 23–32.

enumeration was done by carefully instructed and supervised college students and information was secured for all males 18 years of age or over (except students) and all females 18 or over who were usually employed in some gainful occupation. Questions on the schedule called for information concerning relation to head of household, sex, age, nativity, present or last regular employer, employment status, ability and willingness to work. Names were not asked.

The enumeration revealed some striking contrasts in industrial make-up. In Buffalo 42.7 per cent of the persons enumerated were engaged in manufacturing and mechanical pursuits, while in Lincoln only 16.9 per cent were so engaged. In the manufacture of iron, steel, and their products, Buffalo showed 9.4 per cent and Lincoln 0.6 of one per cent of those enumerated. Automobiles, parts and tires accounted for 5.4 per cent of those enumerated in Buffalo, and only 1.5 per cent in Lincoln. On the other hand, the trade and transportation pursuits predominated in Lincoln, including 39.9 per cent of those enumerated, as against 27.5 per cent in Buffalo. Almost 20 per cent of those enumerated in Lincoln were engaged in retail and wholesale trade; in Buffalo only 11.4 per cent. Lincoln also showed larger proportions in domestic and personal service and professional service than did Buffalo.

There were, however, some similarities. In the railway, express, bus, gas and light classification, in the government employee group, and in paper, printing and publishing, the proportions were very much the same in both cities. Except for changes in the proportions engaged in the building trades there was no appreciable shift in industrial distribution from 1932 to 1933.

EMPLOYMENT STATUS

The employment status of all persons able and willing to work in both 1932 and 1933 is given in table 1. This and all other tables exclude persons enumerated who were either unable or unwilling to work.[3] Table 1 indicates that unemployment was much more severe for both men and women in both years in Buffalo than in Lincoln. Unemployment for Buffalo males showed a decrease from 1932 to 1933, but for females in Buffalo and for both males and females in Lincoln a slight increase in unemployment is shown. Part time employment was also greater in Buffalo than in Lincoln. However, Buffalo showed a substantially greater decrease in this classification during the year than did Lincoln. Full time employment was considerably more each year in Lincoln than in Buffalo, but there was almost no change in full time employment in Lincoln during the year. Buffalo, on the other hand, showed a marked gain in full time employment, increasing from 463 per thousand for both sexes in 1932 to 582 per thousand in 1933. This difference, however, is not surprising. Recovery, like depression, comes more rapidly to industrial than to agricultural communities.

[3] In 1933 this group constituted 6.3 per cent of the males enumerated in Lincoln and 4.4 per cent of the males enumerated in Buffalo.

TABLE 1

Employment status of all persons, able and willing to work, Buffalo and Lincoln, 1932 and 1933

EMPLOYMENT STATUS	BUFFALO				LINCOLN			
	1933		1932		1933		1932	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
Males								
Employed:								
Full time	7,125	57.4	5,262	44.0	1,699	66.9	1,800	66.5
Part time	1,729	13.9	2,795	23.4	291	11.5	343	12.7
¾ but less than full	503	4.0	846	7.1	52	2.0	68	2.5
½ but less than ¾	692	5.6	1,090	9.1	130	5.1	171	6.3
¼ but less than ½	319	2.6	464	3.9	39	1.5	35	1.3
Less than ¼	212	1.7	394	3.3	48	1.9	44	1.6
Fraction not reported	3	*	1	*	22	0.9	25	0.9
Unemployed	3,564	28.7	3,903	32.6	550	21.7	563	20.8
Total, males	12,418	100.0	11,960	100.0	2,540	100.0	2,706	100.0
Females								
Employed:								
Full time	2,032	61.4	1,639	55.6	659	70.0	666	68.5
Part time	415	12.5	560	19.0	107	11.4	148	15.2
¾ but less than full	87	2.6	141	4.8	12	1.3	23	2.4
½ but less than ¾	163	4.9	235	8.0	41	4.4	58	6.0
¼ but less than ½	69	2.1	96	3.2	21	2.2	22	2.3
Less than ¼	94	2.8	88	3.0	19	2.0	32	3.3
Fraction not reported	2	0.1	—	—	14	1.5	13	1.3
Unemployed	864	26.1	750	25.4	175	18.6	158	16.3
Total, females	3,311	100.0	2,949	100.0	941	100.0	972	100.0
Both sexes								
Employed:								
Full time	9,157	58.2	6,901	46.3	2,358	67.7	2,466	67.0
Part time	2,144	13.6	3,355	22.5	398	11.4	491	13.3
¾ but less than full	590	3.8	987	6.6	64	1.8	91	2.5
½ but less than ¾	855	5.4	1,325	8.9	171	4.9	229	6.2
¼ but less than ½	388	2.5	560	3.8	60	1.7	57	1.5
Less than ¼	306	1.9	482	3.2	67	1.9	76	2.1
Fraction not reported	5	*	1	*	36	1.0	38	1.0
Unemployed	4,428	28.2	4,653	31.2	725	20.8	721	19.6
Total, both sexes	15,729	100.0	14,909	100.0	3,481	100.0	3,678	100.0

* Less than one-tenth of one per cent.

NATIVITY AND EMPLOYMENT STATUS

Table 2 presents data on the employment status of males by nativity groups. While the number of native colored in Lincoln is too small to be meaningful, the table shows unemployment to be most severe in both Buffalo and Lincoln in 1932 and in 1933 for the native colored. Foreign born and native white followed in the order named. In Lincoln, full time employment for native white males was virtually unchanged during the year, but it increased for the foreign born from 499 per thousand in 1932 to 546 per thousand in 1933. In Buffalo, substantial increases in full time employment were

TABLE 2

*Employment status of all males, able and willing to work, by nativity groups, Buffalo and Lincoln, 1932 and 1933**

NATIVITY AND EMPLOYMENT STATUS	BUFFALO				LINCOLN			
	1933		1932		1933		1932	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
Native white								
Employed:								
Full time	5,708	59.6	4,242	46.5	1,450	69.7	1,572	69.6
Part time	1,223	12.8	2,022	22.1	216	10.4	262	11.6
Unemployed	2,648	27.6	2,864	31.4	414	19.9	426	18.8
Total	9,579	100.0	9,128	100.0	2,080	100.0	2,260	100.0
Native colored								
Employed:								
Full time	76	40.2	50	23.8	14	†	21	†
Part time	36	19.0	60	28.6	1	†	1	†
Unemployed	77	40.8	100	47.6	21	†	18	†
Total	189	100.0	210	100.0	46	†	40	†
Foreign born								
Employed:								
Full time	1,341	50.6	970	37.0	221	54.6	187	49.9
Part time	470	17.7	713	27.2	72	17.8	75	20.0
Unemployed	839	31.7	938	35.8	112	27.7	113	30.1
Total	2,650	100.0	2,621	100.0	405	100.0	375	100.0

* Does not include 1 male in Buffalo in 1932, 31 males in Lincoln in 1932, and 19 males in Lincoln in 1933 not reporting as to nativity.

† Percentages not computed because of small numbers involved.

TABLE 3

*Employment status of males, able and willing to work, by age groups, Buffalo and Lincoln, 1933**

AGE	BUFFALO				LINCOLN			
	Employed full time	Employed part time	Unemployed	Total	Employed full time	Employed part time	Unemployed	Total
	Number							
Under 20 years	135	28	240	403	179	36	134	349
20 and under 25	672	197	614	1,483				
25 and under 30	805	183	391	1,379	201	32	45	278
30 and under 35	933	194	294	1,421	221	28	39	288
35 and under 40	1,067	250	383	1,700	208	28	45	281
40 and under 45	1,044	274	383	1,701	230	26	46	302
45 and under 50	850	219	323	1,392	191	44	46	281
50 and under 55	714	163	308	1,185	198	40	55	293
55 and under 60	406	109	205	720	103	23	42	168
60 and under 65	269	66	194	529	84	11	42	137
65 and under 70	164	28	130	322	68	21	55	144
70 and over	66	18	99	183				
Total	7,125	1,729	3,564	12,418	1,683	289	549	2,521
	Per cent							
Under 20 years	33.5	6.9	59.6	100.0	51.3	10.3	38.4	100.0
20 and under 25	45.3	13.3	41.4	100.0				
25 and under 30	58.4	13.3	28.3	100.0	72.4	11.4	16.2	100.0
30 and under 35	65.7	13.6	20.7	100.0	76.7	9.7	13.6	100.0
35 and under 40	62.8	14.7	22.5	100.0	74.0	10.0	16.0	100.0
40 and under 45	61.4	16.1	22.5	100.0	76.2	8.6	15.2	100.0
45 and under 50	61.1	15.7	23.2	100.0	68.0	15.6	16.4	100.0
50 and under 55	60.3	13.8	25.9	100.0	67.5	13.7	18.8	100.0
55 and under 60	56.4	15.1	28.5	100.0	61.3	13.7	25.0	100.0
60 and under 65	50.9	12.4	36.7	100.0	61.3	8.0	30.7	100.0
65 and under 70	50.9	8.7	40.4	100.0	47.3	14.6	38.1	100.0
70 and over	36.1	9.8	54.1	100.0				
Total	57.4	13.9	28.7	100.0	66.8	11.4	21.8	100.0

* Does not include 19 males in Lincoln not reporting as to age.

shown in all three nativity groups, the increase being greatest for the native colored.

AGE AND EMPLOYMENT STATUS

In table 3 are shown data on the employment status of males of the different age groups for 1933. It will be observed that the results of both Buffalo and Lincoln were very much the same, greatest unemployment being found in the extreme age groups. For Buffalo the figures reveal that the percentage unemployed was least

among males 30 to 35 years of age, and only slightly higher for those 35 to 50. In 1932, least unemployment was found among males 35 to 40 years of age. So slight was the change, however, that it is probably of no significance. Greatest part time employment was found in the 40 to 45 age group, but except for the very old and very young, for which groups part time employment was least, there was little difference among the different age groups. Greatest full time employment was enjoyed by Buffalo males 30 to 35 years of age, but the difference between this group and those between 35 and 55 was not great. Full time employment was least among the very young and very old.

Data for Lincoln show only slight variations from the Buffalo experience. Least unemployment was found for males 30 to 35, but not much less than for those from 25 to 30 and 35 to 50. Greatest part time employment fell in the 45 to 50 age group. Full time employment was enjoyed by about the same proportion of men within the range of 25 to 55 years. The 1933 figures do not differ materially from those of 1932.

INDUSTRY AND EMPLOYMENT STATUS

The employment status of males in the major industry groups in 1933 is given in table 4. While too few persons were enumerated in some industry groups in Lincoln to make comparisons meaningful, striking similarities may be seen. In both Buffalo and Lincoln, greatest full time employment and least unemployment was found among those engaged in professional service. With the exception of the miscellaneous group, for which there were no comparable Lincoln figures, least full time employment and greatest unemployment, as well as greatest part time employment, was found in the manufacturing and mechanical pursuits. While some of the differences are not great, every major industrial group showed greater unemployment and less full time employment in Buffalo than in Lincoln. This was true also of the 1932 figures.

Comparisons of the 1932 figures with those for 1933 for the different industry groups reveal some interesting points. Substantial gains in full time employment were made in Buffalo for those engaged in manufacturing and mechanical pursuits, the increase being from 285 per thousand in 1932 to 488 per thousand in 1933. Marked decreases appeared in part time employment and unemployment for the same group. An increase in full time employment from 591 per thousand in 1932 to 699 per thousand in 1933 was enjoyed by Buffalo government employees. In the same classification unemployment decreased from 231 per thousand to 162 per thousand. Unemployment remained about the same for those engaged in trade and transportation, but there were fewer part time employees and more full time employees in 1933 than in 1932. In the remaining Buffalo groups slight, but not significant improvements were shown.

In only one group were significant changes noted in Lincoln. Full time employment increased from 617 per thousand in 1932 to 730 per thousand

TABLE 4

*Employment status of males, able and willing to work, by industry group, Buffalo and Lincoln, 1933**

INDUSTRY GROUP	BUFFALO				LINCOLN			
	Employed full time	Employed part time	Unemployed	Total	Employed full time	Employed part time	Unemployed	Total
	Number							
Professional service	171	12	20	203	143	4	8	155
Clerical (not otherwise specified)	—	—	45	45	7	—	2	9
Domestic and personal service	384	64	162	610	116	14	29	159
Government employees (other than teachers)	851	169	198	1,218	198	21	27	246
Trade and transportation	2,146	418	728	3,292	823	148	133	1,104
Manufacturing and mechanical pursuits	2,871	1,003	2,010	5,884	271	85	179	535
Labor (not otherwise specified)	1	—	30	31	3	7	35	45
Self-employed	683	60	146	889	120	3	16	139
Miscellaneous	18	3	224	245	14	8	63	85
Total	7,125	1,729	3,563	12,417	1,695	290	492	2,477
	Per cent							
Professional service	84.2	5.9	9.9	100.0	92.3	2.6	5.2	100.0
Clerical (not otherwise specified)	†	†	†	†	†	†	†	†
Domestic and personal service	63.0	10.5	26.5	100.0	73.0	8.8	18.2	100.0
Government employees (other than teachers)	69.9	13.9	16.2	100.0	80.5	8.5	11.0	100.0
Trade and transportation	65.2	12.7	22.1	100.0	74.5	13.4	12.0	100.0
Manufacturing and mechanical pursuits	48.8	17.0	34.2	100.0	50.7	15.9	33.5	100.0
Labor (not otherwise specified)	†	†	†	†	†	†	†	†
Self-employed	76.8	6.8	16.4	100.0	86.3	2.2	11.5	100.0
Miscellaneous	7.4	1.2	91.4	100.0	†	†	†	†
Total	57.4	13.9	28.7	100.0	68.4	11.7	19.9	100.0

* Does not include 1 male in Buffalo and 63 males in Lincoln not reporting as to industry.
† Percentages not computed because of small numbers involved.

in 1933 for those engaged in domestic and personal service. In all other groups marked stability was shown.

DURATION OF UNEMPLOYMENT

Table 5 presents data on the duration of unemployment for males able and willing to work. In both Buffalo and Lincoln, over three fifths of the unemployed had been idle more than one year in November 1933. In Buffalo over half had been idle for more than two years. Slightly over 45 per cent had been idle for more than two

years in Lincoln. In both cities unemployment of two years duration increased greatly from 1932 to 1933, but in most of the other classifications decreases were noted.

One rather striking difference between the two cities should be noted. In Lincoln a substantial decrease in *new* unemployment (i.e., unemployment of less than 10 weeks duration) took place between 1932 and 1933. In Buffalo, however, there was a marked increase in new unemployment—from 104 per thousand in 1932 to 180 per thousand in 1933. This reflected a slight decline in employment in October and November 1933, which is shown by the Buffalo factory employment data of the New York State Department of Labor.

CONCLUSION

Unemployment and under-employment were greater in Buffalo than in Lincoln in both 1932 and 1933, due, for the most part, to the differing industrial character of the two cities. Between 1932 and 1933 unemployment decreased in Buffalo, but increased very slightly (not significantly) in Lincoln. In both cities unemployment was greater for native colored and for foreign born than for native whites. Unemployment was most severe among men under 25 and 60 years of age or over. No significant change was noted in this respect during the year. Employment conditions were better in each of the major industry groups in Lincoln than in Buffalo, but in Buffalo

TABLE 5

*Duration of unemployment of males, able and willing to work, Buffalo and Lincoln, 1932 and 1933**

DURATION OF UNEMPLOYMENT	BUFFALO				LINCOLN			
	1933		1932		1933		1932	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
Less than 10 weeks	639	18.0	404	10.4	57	10.9	134	26.3
10 and under 20 weeks	204	5.7	305	7.8	39	7.4	49	9.6
20 and under 30 weeks	156	4.4	419	10.8	35	6.7	61	12.0
30 and under 40 weeks	81	2.3	230	5.9	19	3.6	24	4.7
40 and under 52 weeks	52	1.4	199	5.1	38	7.2	16	3.1
52 and under 104 weeks	504	14.1	918	23.5	99	18.9	123	24.1
104 weeks and over	1,928	54.1	1,425	36.5	238	45.3	103	20.2
Total	3,564	100.0	3,900	100.0	525	100.0	510	100.0

* Does not include 3 males in Buffalo in 1932, 53 males in Lincoln in 1932, and 14 males in Lincoln in 1933 not reporting as to duration of unemployment.

considerably greater improvement was shown from 1932 to 1933. Almost no change was noted in the Lincoln industry groups. Unemployment had been of longer duration in Buffalo than in Lincoln, but unemployment of long standing increased more in Lincoln than in Buffalo from 1932 to 1933. There was considerably more *new* unemployment in Buffalo than in Lincoln.

It should be noted that government made work was under way in both cities when the 1933 study was made, but that C. W. A. employment did not actively begin until two or three weeks after the time of enumeration.

Until the Federal government or the States maintain current figures on unemployment it is to be hoped that an increasing number of comparable local studies will be made to furnish a sorely needed body of accurate and comprehensive unemployment data.

The Effect of Color on Workmen

By David H. Pierce and James D. Weinland, *New York University*

Experiments with white and colored lights in a work-room do not confirm traditional notions about the effects of red and yellow, green and blue.

The experiment described here was undertaken to examine the effect of color upon men working at the Bogardus factory test machine. Various colored lights were used, one by one, in a room painted white. The men were paid wages and employed for regular working days. Output was measured and introspective reports of bodily feeling were taken every fifteen minutes. The findings favored white and indicated that nervous excitation resulted when the colors deviated from white. Introspective feeling reactions were marked but not consistent. Green for instance did not appear to be characteristically stimulating nor blue soothing. There was no evidence supporting the view that red is warm and green is cool. The results indicate that feeling responses to color, are due to association of color with objects rather than to any inherent feeling response to color itself.

THE object of these experiments was to ascertain the effect of lighting of various colors upon workmen's output and feelings. It has often been said, even by authorities, that red is exciting, blue quieting, green cooling, etc. We planned a controlled experiment to examine this matter.

Experimental room. A small room where factory conditions could be simulated, and the lighting controlled, was used for the investigation. The window was covered to shut out daylight, and the walls and ceiling were painted a flat white, to give full reflection to the various colors. Red, green, blue, yellow, orange-amber, and yellow-amber lamps were used, producing an effect approximately the same as if white lights had been used continually in a room painted first red, then green, then yellow, etc.

Apparatus. The work consisted in operating a Bogardus factory test machine. This equipment has a motor driven rotating arm which, in turning, pushes a block off the table so that it falls into a receiving pan below. The workman's job consists in picking up the blocks and putting them back on the table, one by one, where the rotating arm can strike them. A mechanical recorder counts one each time a block is knocked off. The operation may continue any number of hours and resembles a routine factory job. The table, blocks and machine were painted a flat black to absorb all wave lengths of light. After some preliminary experiments a thermometer was installed, so that the temperature could

be recorded. The amount of light used was measured in "foot-candles" by a Weston foot-candle-meter.

Procedure. A foreman was in charge of the work and two men, a recorder and operator, always worked together. The amount of light for each experiment was regulated at approximately 2.5 foot-candles of a given color, and no other light was permitted to enter the room. The operator, after starting the motor, sat down at the table and went to work. His task of picking up the blocks one by one and placing them in position on the table where they would be knocked off by the revolving arm and counted was rendered more exacting by the fact that each block must be placed on exactly the right spot in order for the counter to work. Consequently, close attention was required and the job was difficult enough to induce fatigue. A half dozen blocks were used, so that there was always one waiting in the receiving pan. By rotating the mechanical arm at a constant speed, variations in work output were made to depend upon the operator's failure to keep up with the machine as fatigue, monotony or dizziness, affected him.

A single work period lasted for fifteen minutes, after which the machine was stopped and the counter figures and room temperature were recorded. Both operator and recorder indicated by checking on a mimeographed sheet how they felt. Then, after a ten-minute interval, the work was resumed. The two men remained in the room, subject to the colored light, during the whole morning or afternoon period, even though the work was not continuous. For each new man the various colors were presented in a different order.

The experiment lasted for thirty days and represented 186 working hours. The working day was approximately from nine o'clock to five, with an hour for lunch; though care of the apparatus reduced the time actually spent in working periods. A licensed engineer acted as foreman for nearly all the experiments and took charge of the records. The workmen were provided through the courtesy of the Gibson Committee of New York City, by whom they were paid.

THE RESULTS

Output. Table 1 gives for each color separately: (1) duration of the experiment in hours and minutes; (2) total output in number of blocks; and (3) average number of blocks per minute. It will be observed that output averages highest under white light. Yellow follows with its record slightly lowered by the woman worker who perhaps should not have been compared with men on this task. As the light deviated from white, output fell off. We shall find in the feeling reactions some suggestions as to why output did fall off under the colored lights.

Feeling reactions. The term feeling is used here in the popular, rather than the technical sense. Various feeling reactions such as "monotony," "impatience," "feeling good," etc. were listed on mimeographed sheets on which men checked their state of feeling at the end of each fifteen minute experiment. A choice between "some" or "much," was given for each reaction. The number of feeling

reactions to the various colors is given in table 2.

It should be noted that when the workmen checked their feeling reactions they marked one or several "feelings" as they chose. In consequence the colors are not equally represented, red, green, and yellow having stimulated more feeling responses than the other colors.

The workmen felt the effects of colored lights and had no difficulty in recording their feelings. Still, these feeling reactions were inconsistent and showed no evidence of characteristic reactions due to any color. No evi-

TABLE 1

Effects of various colors on output

COLOR	TOTAL DURATION OF EXPERIMENTS		TOTAL OUTPUT OF BLOCKS	AVERAGE NUMBER OF BLOCKS PER MINUTE	REMARKS
	hours	*minutes*			
Blue	45	36	33797	12.35	
Green	32	05	28081	14.58	
White	34	05	32582	15.93	
Red	24	51	17924	12.02	
Yellow	23	50	21101	14.75	Includes one workwoman
Orange-amber	21	40	15588	11.99	Three workmen
Yellow-amber	4	45	2474	8.67	One workman
Total	186	52	151547	12.90	

TABLE 2

Feeling reactions

"SOME" REACTIONS		QUALITY OF RESPONSE	"MUCH" REACTIONS	
Number of responses divided by time	Color		Color	Number of responses divided by time
1.17	Orange amber	Feel very good		
1.58	Green	Feel good		
1.19	Yellow	Feel average		
.21	Green	Feel below par		
1.25	Red	Dullness	Green	.43
.71	Orange amber	Monotony	Green	.59
1.25	Red	Fatigue	Red	.78
.89	Yellow	Headache	Red	.27
.75	Blue	Impatience	Green	.40
.15	Red	Excited	White	.05
.98	Red	Nervousness	Red	.07
1.25	Yellow	Dizziness	White	.17
.52	Green	Grogginess	Yellow	.29
.58	Red	Sick stomach	Red	.07

dence was found supporting the reason given recently by a prominent company for painting the walls of their new factory green "for its energizing effect;" or for such statements as this one by Luckiesh:[1] "A workman in overalls working at a machine painted a 'boudoir orchid,' violates that cardinal principle—appropriateness. This color has its place but in this case defeats the purpose and may even make the visitor smile." Luckiesh assumes that orchid arouses a "boudoir" response whether or not it is seen in the boudoir. Our experimental results do not support this, but suggest that color, design and situation would all be necessary to arouse the response. Color alone would not do it.

Response to temperature. The view has often been expressed that orange, yellow, and red are warm colors; while blue, green, and violet are cool colors. In one account of color in the ceramic industry, the statement is made that kitchen utensils should not be red, as the housewife, already too hot in her kitchen, will take offense at the warm color. Luckiesh, an authority on color, says:

> "In the work world little difficulty is experienced in keeping warm, perspiration is commonly associated with work. To feel cool is far more desirable in working places. Thus the color schemes are narrowed very definitely into cool ones." He suggests as a cool scheme to make workmen feel cool, "Olive green for the dado and lower portions of pillars and machinery; a very light tint of green for the upper walls, a near white for the ceiling.[2]"

If there is such a temperature response to color it could hardly arise from the physics of the situation. The infra red rays are the heat rays, and red being closer to them than blue, will usually be reflected by the same substances that reflect the infra red rays. It follows that a red barn is warmer to stand beside, and cooler to stand within, than a blue barn. In the same way a red coat would be warmer to stand beside, and cooler to stand within, than a blue coat; although the temperature difference would be too small to register. Similarly differences in the heat reflected by red or blue walls would be too small to register on a thermometer.

In order to examine the temperature effect of color, the following procedure was followed. At every fifteen minute rest period the men were asked to check on the mimeographed sheet whether they felt warm and, if so, whether "some" or "much." The order frequency of these judgments under the different lights is given below.

Some heat	*Much heat*
Blue	Green
Orange-amber	Yellow
Red	Red
Yellow	Blue
Green	White
White	(None recorded for orange-amber)

It is noticeable that white has the largest output and yet the smallest number of "heat" feeling responses both "some" and "much."

The inconsistency in these reactions (green, for instance, ranking low for "some" heat and high for "much" heat) indicates that the subjects felt no constant and definite temperature effects from the colors. The position

[1] *Seeing.* Luckiesh and Moss. P. 214.
[2] *Seeing.* Luckiesh and Moss. P. 212.

of white at the bottom of the list might possibly be interpreted as due to the cooling effect of white, but more probably indicates that nervous excitation was less and perception better with consequent comfort under white lights.

GENERAL CONCLUSIONS

1. White light produced conditions resulting in the least nervous excitation and the greatest output.

2. When the color deviated from white, nervous excitation, sometimes pleasant and sometimes unpleasant, resulted.

3. This response to color, noticeable in output, was still more definitely to be observed in the feeling reactions of the men. No constant response characteristic of any color was discovered, but pronounced reactions occurred which we have recorded under the undifferentiating term of nervous excitation. We conclude that special influences attributed to particular colors are responses suggested by tradition, or more frequently, a consequence of both color and situation. We do not find evidence that green would be energizing, or that any color unaided by design or content would carry its associational effect into the workroom.

4. Results suggest that warmth and coolness in color do not mean temperature warmth and coolness. Because flame and blood are red, people assume that red always has a warming effect, forgetting that sunset reds, autumn leaf reds, and flower reds do not apparently make people feel warm.[3]

Warmth and coolness in colors must connote rather the meaning we have when we speak of warm and cool hearted people. It would hardly be recommended that cold hearted foremen be placed in shops, lest association with warm hearted men overheat the workers.

[3] Our conclusion in regard to the temperature effect of color received this corroboration from the Eastman Research Laboratories to which we wrote. Mr. Lloyd A. Jones of their physics department answered as follows: "We have no real data, as to whether or not workers in the plant, where photographic materials are manufactured, feel warmer under red illumination than under green. From my own personal experience, however. I may venture this opinion. I do not believe that such an effect exists."

Suggestions for Measuring Recklessness

By Harold E. Burtt, *Ohio State University*, and Orian C. Frey, *New York University*

Among crane operators, truck drivers, miners, and workers in other more or less dangerous occupations, recklessness is a trait of personality regarding which both worker and employer need to be informed. Personnel workers developing selection procedures for such occupations may find it profitable to undertake to validate tests such as those here described.

Tests were given which ostensibly measured coördination or accuracy in adjusting apparatus, but in which some variation was possible in the mode of attack. It was suspected that the reckless individual would be tempted to make more hasty or fewer adjustments and that this tendency might be revealed by appropriate scoring. The tests involved such things as balancing a long rod, putting nuts on machine screws and filling graduates with water up to a designated mark. A criterion with an estimated reliability of .86 was obtained by means of a graphic rating scale. Six items of test score weighted in a regression equation yielded a multiple correlation of .60 with this criterion. Factor analysis of the intercorrelations between the tests suggests that the principal factor is one of haste, but there is a further suggestion that this tendency is modified somewhat by the apparent difficulty of the task and by the individual's awareness of his own mistakes.

THE present investigation is concerned with the possibility of developing laboratory tests to measure recklessness. As in other personality tests, it is necessary ostensibly to measure something else, and by analyzing the results, to get an indirect measure of the variable sought. In the present instance the subjects took what were apparently coördination tests, in which, however, some variation was possible in mode of attack. It was hoped that the test situation was such that the reckless person would be tempted to make a quick adjustment and let it go at that, while the more careful person would make more and longer attempts. Such variables as number of attempts, time and accuracy were recorded. A number of tests were developed along these lines, a fairly reliable criterion of recklessness was secured for a group of subjects, various items of test score were correlated with the criterion and weighted in a regression equation, and the intercorrelations between tests were studied by the technique of factor analysis.

THE TESTS

After some preliminary work the program narrowed down to 7 tests

which were scored in various ways. These tests will be described briefly, but should not be considered as finally standardized. Our interest at the present time is in testing underlying assumptions and general principles.

Test 1 involved pouring water into small graduates to fill them to a designated level. Five graduates of 30 cc. capacity stood upright on the table with a dark line at the 5, 10, 15, 20 and 25 cc. levels respectively. The subject filled them to the designated marks from a 150 cc. beaker mounted on the end of a wooden handle 90 cm. long. He was instructed that both the time required and the accuracy of the result counted in his score. The time was noted in seconds and the error per graduate in units of half cubic centimeters.

Test 2 was a simple maze consisting of 21 rectangles 15 by 20 cm. laid out on the floor with chalk. Arrows indicated the direction of the possible pathways. At three points adjustable hurdles were introduced and the subject could step over a hurdle or take a longer pathway around it. One hurdle was set at a height equal to the distance from the subject's kneecap to heel; another was 5 cm. lower and a third was half this height. On each successive trial the bars on all three hurdles were lowered 13 mm. This progressive reduction was designed to tempt even the cautious subject to step over sooner or later. The test was discontinued when the subject took all 3 hurdles successfully on the supposition that he was now as reckless as he could be in that situation. The instructions stressed speed in traversing the maze, and accuracy in stepping in the rectangles and pointed out the possibility of a shorter path over the hurdles or a longer one around them. Items of score were time, distance, and accuracy. The test was repeated with the subject carrying a 22 cc. test tube filled with water and instructed further that the amount of water in the tube after the trip constituted an additional element of score.

Test 3 involved balancing copper discs on the ends of small vertical steel rods. They were in groups of four. The diameter of the rods in each group was 1.3, 1.8, 3.2, 4.8 and 6.3 mm. respectively. The ends of the rods were machined and the burr filed. The discs were 19 mm. in diameter and about .56 mm. thick. The subject was instructed to place a disc on each rod and told that he would be scored on the time required and the number successfully balanced. He was not allowed to replace discs that fell off on the first attempt. The additional time required subsequently to replace them perfectly, constituted an additional item of score.

Test 4 involved placing hex nuts on machine screws which projected 6 mm. from the surface of a board. There were 4 groups of 5 sizes each as follows: 4–36, 6–32, 8–32, 10–32 and $\frac{1}{4}''$ S.A.E. Before the trial the nuts were placed in front of the proper screws and the subject screwed them on till they touched the board. He was told that he would be scored on the time taken and the number correctly placed on the first attempt. An additional score was the time required to replace those missed on the first attempt, as in test 3.

Test 5 involved placing a light weight on a platform suspended by

springs so that it would vibrate up and down as little as possible. The platform was a light metal triangle suspended by spiral springs running upward from the corners and, with the weight (a block of wood weighing 6.5 gms.) in place, vibrated vertically at 30 cycles per min. A point projected below the platform making contact with an adjustable mercury cup. The subject was told that he would be scored on the time taken to make the adjustment of the block and on the number of vibrations made by the platform after he released the block. The latter were recorded by an electric counter in series with the mercury cup.

Test 6 was a type of electrically recording maze with a variety of pathways but so arranged that the longer a pathway the wider it was.[1] The lateral pathways were of ample width for the average subject to negotiate without error, but alternate transitions between lateral paths could be made through any one of 8 openings 13 mm. long and varying in width from 4 mm. to 9.6 mm.—with the wider choices necessitating a longer course. This situation presented itself 10 times in the course of the maze. The subject was told that he would be scored on the time required to traverse the maze and the number of contacts he made with the edge. The total distance was likewise noted. The counter that recorded contacts was on the table beside the apparatus and audible to the subject.

Test 7 involved balancing a steel rod so that it would remain upright as long as possible before falling over. The rod was 9 mm. in diameter and 160 cm. long. Its lower end rested on a metal plate directly below the center of a 32 cm. wire hoop mounted horizontally 145 cm. from the floor. The subject's thumb and forefinger were insulated by rubber glove fingers and a piece of very thin curved sheet brass was fastened to the thumb with rubber bands. A flexible wire led from this brass thumb-piece. The rod and base plate constituted one pole of a circuit which could be completed through either the thumb or the hoop. This circuit operated a 10 cycle signal magnet on a kymograph. The subject was instructed that he would be scored both on the time the rod remained in the air before touching the hoop and on the time he required to make the adjustment before letting go. A further score recorded was the actual number of adjustments made before finally letting go. The test was repeated with the subject required in addition to catch the rod again just before it touched the hoop. Failure to do this constituted an error and the other scores were as in the preceding.

[1] Cf. Weiss, A. P., Lauer, A. R., et al. *Psychological Principles in Automotive Driving.* Ohio State University Studies. Psychology, no. 11, 1931, Ch. 15.

THE CRITERION

These tests were given to members of a fraternity where there seemed a possibility of securing a fairly reliable criterion of recklessness. Several members who knew the group intimately appeared sufficiently responsible and interested to provide adequate ratings.

The criterion was obtained by means of a rather extensive graphic rating scale. Items were devised covering a

considerable range of situations in which a person might demonstrate various degrees of recklessness or carelessness. In the scale as originally executed by the raters there were 42 items. Fifteen of these dealt with automobile situations, 5 with care of personal appearance, 3 with betting, 3 with handling money, 5 with appearance of one's room, 4 with school work and 7 with emotional stability or miscellaneous factors. Two typical items are shown below. The items were

When driving with company in the car he

Turns head, takes both hands off wheel and gestures	Turns head, takes both hands off wheel	Turns head, takes one hand off wheel	Turns head, slightly and looks at you	Answers curtly and pays strict attention to driving

As far as climbing is concerned he would

Step from one 10-story window to another	Climb the face of 20-foot cliff	Climb from attic window to roof	Climb ladder to wash 2nd story window	Climb step-ladder

staggered, the most reckless phrase sometimes being placed at the right and sometimes at the left. At the end of each line were 4 boxes labelled respectively 1, 2, 3, 4. The rater checked in one of these boxes for the given subject and item, to indicate the certainty of his judgment. A check in box 4 meant that he had actually observed the subject behave in that way. If he had not seen the subject act accordingly but was "positive" that he would do so if the situation presented itself, a check was placed in box 3. If he was "quite certain" that the subject would behave in that way the check went in box 2. A check in box 1 meant that the rater was uncertain as to how the subject would behave but felt it would be as indicated.

With 21 subjects, 42 items and 4 degrees of certainty a rather large task was presented to the raters. They spent on the average 7 hours in making the ratings.

After some experimentation in weighting the ratings in accordance with the certainty of the rater it developed that as satisfactory a method as any was to use the numbers 1, 2, 3 or 4 as checked in the boxes for the weights. The actual marks on the graphic scale were converted into numbers by a 15-column stencil in which the larger score indicated greater recklessness. These numbers were each multiplied by the corresponding degree of certainty. Thus a maximum weighted score would be 15 x 4 or 60. All individual ratings were weighted in this fashion.

Investigation was next made of the reliability of the items with a view to discarding the least reliable. With 5 raters there would be for each item 10 possible intercorrelations between raters. The computation of all these seemed prohibitive, so the 2 most mature and presumably most reliable raters were selected and for each of the 42 items rank-difference correlations were calculated. As a result of this analysis 19 items were selected whose

correlations were .50 or greater. The other items were then discarded in making up the criterion.

The 19 most reliable items were then tabulated by subject and by rater. Then for each of the 5 raters the weighted total of the 19 items for each subject was computed. The average of all 5 raters constituted the final criterion score for each subject; but the intermediate computation was performed in order to obtain some notion as to the reliability of the final criterion. This reliability was approached by intercorrelating the 5 raters using the total weighted scores for each subject. The 10 intercorrelations between raters ranged from .39 to .78 and averaged .56. The Spearman-Brown formula with N equalling 5 yields a correlation of .86. For the entire group of subjects the final criterion scores had a mean of 14.9 and a standard deviation of 4.1.

TABLE 1

Intercorrelations between the various measures of recklessness

	2	3	4	5	6	7	MEAN	STANDARD DEVIATION	MEASURE OF RECKLESSNESS
1	.39	−.42	−.28	−.37	−.31	−.16	14.9	4.1	Criterion
2		−.26	−.02	−.35	−.37	−.41	5.3	2.9	Beaker error
3			.19	.13	.21	.04	11.2	2.2	Time, foot maze
4				.22	.41	.31	94.4	23.2	Time, nut
5					.67	.20	2.0	1.7	Adjust, rod
6						.37	11.3	3.3	Time, air rod
7							42.0	23.5	Time, stylus maze

VALIDITY OF TESTS

Given the test scores as above described and the final criterion scores, the next step was to correlate the tests with the criterion to determine their validity. Altogether there were 43 items of test score and it was a question of selecting the best ones. Some of those with obviously large discrepancies between test and criterion were thrown out after inspection. The remaining 26 were correlated with the criterion by the product-moment method. Those with the highest correlations were then intercorrelated. On the basis of this array 6 tests or items of score were finally selected to go in the regression equation. Selection was made on the basis of high correlations with the criterion and low correlations with other tests.

The correlations finally used appear in table 1. Each entry represents the correlation between the variables noted at the end of the corresponding row and the top of the corresponding column. The means and standard deviations are given at the right of the correlation array. The nature of the variables is indicated briefly at the extreme right but will now be elaborated slightly. Variable 1 is the criterion obtained from the graphic rating scale. Variable 2 is the error in filling the graduates with water in half c.c. units and is in absolute terms, regardless of whether the subject poured too much

or too little water. Variable 3 is the time in seconds required to traverse the foot maze in the main series in which no water was carried. Variable 4 is the time required to put the nuts on the machine screws in the main series regardless of the number dropped. Variable 5 is the number of adjustments made in balancing the rod in the second part of the test in which the subject caught the rod before it touched the hoop. Variable 6 is the time the rod remained in the air in this same test. Variable 7 is the time in the stylus maze.

It will be recalled that the criterion was scored in such a way that a larger score indicated greater recklessness. The signs of the correlations with variable 1 show that greater recklessness goes with greater error in filling the graduates, fewer adjustments of the rod before letting go and shorter time in the remaining tests. The signs of these correlations are plausible. It may be noted further that the highest zero order correlation with the criterion is $-.42$, but that the intercorrelations of the tests are rather small for the most part. The latter is a bit encouraging from the standpoint of weighting the tests.

One other variable was considered before the foregoing correlations were taken at face value. It was possible that the subject's individual skill in coördination or motor control might constitute a variable that would cut across his manifestation of recklessness. Consequently the subjects were given a modified form of the conventional steadiness test which consists of holding a stylus in holes of decreasing size in a metal plate. Partial correlations were computed between test scores on several tests and the criterion, with steadiness held constant. Since the correlations were not appreciably changed, the procedure was dropped from further consideration.

MULTIPLE CORRELATION

The Doolittle method was used to determine the regression equation for weighting the test scores. The equation thus obtained is as follows. (The subscripts refer to the variables indicated in table 1.)

$$X_1 = .39X_2 - .56X_3 - .04X_4 - .63X_5 + .14X_6 + .01X_7 + 22.18$$

The multiple correlation computed from the intercorrelations is .59. When the original test data are weighted according to the regression equation and the weighted scores correlated with the criterion of recklessness the result is .61. This compares favorably with many projects in which a battery of aptitude tests is correlated with a vocational criterion. It seems probable that we are on the right track in attempting to develop tests of recklessness by a type of coördination test in which the subject has a chance to manifest his natural tendency to proceed carefully or recklessly.

FACTOR ANALYSIS

Investigation was made of our intercorrelations to ascertain, by factor analysis, how many factors were necessary to account for the intercorrelations of the test. It was then possible to speculate as to the nature of the factors. The technique fol-

lowed was that outlined by Thurstone.[2] The loadings for three factors were found by this method and appear in table 2. Since the third factor residuals average about .04 in absolute value, it appears that three factors are ample to account for our results. The variables are listed in the first column and are the same as in the preceding table.

The first factor receives fairly heavy loadings in three of the tests; the heaviest loading is for the time the rod is in the air. A shorter time would indicate a hasty or careless adjustment. The next heaviest loadings are for small number of adjustments made with the rod, for errors in filling the graduates and for speed in the stylus maze. The first factor is perhaps one of haste in manipulation. The speed element is present in a number of the tests that have appreciable loadings in this factor. Reckless persons often do manifest untoward haste in their activities.

TABLE 2

Loadings for the three factors which account for test results

TEST	FIRST FACTOR LOADINGS	SECOND FACTOR LOADINGS	THIRD FACTOR LOADINGS
2	−.54	−.49	.28
3	.33	.12	.08
4	.47	−.20	.43
5	.67	−.28	−.43
6	.81	−.29	−.15
7	.52	.19	.11

The second factor (loadings in the third column of table 2) is less clear. None of the loadings are as large and some of them are of opposite sign from the first factor loadings. The largest is for errors with the beaker but the next in order are for rod adjustment and time in the air with the signs reversed. There is evidently a differentiation of the subject's attitude on the basis of the task. Perhaps this factor represents haste when the subject sees that he is being successful (filling the graduates) but a tendency to slow down when he cannot tell readily how he is succeeding (balancing the rod).

The third factor's principal loadings indicate a tendency to speed up in putting on the nuts but to slow down and make more adjustments in balancing the rod. Perhaps this factor represents haste in an apparently easy task but more care when the task appears difficult.

The first factor of haste seems reasonably clear; the explanations of the second and third factors should not be pressed. It is possible, however, that the reckless individual, in addition to manifesting haste in his task (first factor), may temper that speed somewhat in the light of the apparent difficulty of the task (third factor) or of his awareness of his success (second factor).

Our data seem to indicate that the reckless individual has a general tendency to speed up regardless, but has a further tendency to speed up when he *thinks* he can "get away with it" and a tendency to speed up when he *finds out* that he can "get away with it."

In conclusion, the experiment should not be regarded as final. It would be advisable to conduct similar experi-

[2] Thurstone, L. L. *A Simplified Multiple Factor Method.* Univ. of Chicago Bookstore, 1933. 25 pp.

ments or to develop further tests. However, the writers feel that the multiple correlation of .60 between the battery of tests and a rather reliable criterion of recklessness is an encouraging start and that the general principles underlying the present experiment are worthy of further exploitation in industrial fields by personnel workers.

Technological Change and Retraining

By Otis E. Young, *State Teachers College, California, Pennsylvania*

The need for adequate programs of retraining is indicated by Dr. Young's study of workmen in the Pittsburgh district who were unemployed because of technological advance.

To ascertain whether technologically unemployed workmen possessed characteristics enough in common to warrant a program of retraining, 267 unemployed workmen in Pittsburgh were interviewed. The study showed that such workmen, regardless of their former occupation, were young enough at time of displacement to profit by additional training. Under present conditions, once unemployed, they are drifting into work they dislike, that has no possibilities of future financial rewards, and is beneath the level of their ability. Furthermore too much time is being wasted in the search for new employment. Where local demand for labor is declining a direct need for greater mobility is felt. A sound program of retraining would go a long way toward correcting the ills induced by present unsatisfactory conditions.

A SOCIETY that permits men to train for an occupation at their own expense, should take steps to insure the continuance of this occupation, or, failing to do this, should provide retraining to compensate for the loss a man sustains when scientific advancement eliminates the work he trained to do. Technological progress is excellent, and doubtless most jobs that the machine removes from human hands are somewhat irksome. Nevertheless human beings value jobs for many reasons. Adequately compensated, an irksome job can be enjoyable, if not for itself, at least for the satisfactions that can be obtained with its financial rewards.

The following study was conducted to find some factors upon which the necessity for retraining could be shown to depend. An effort was made to draw the subjects from as many occupations as possible, to avoid showing trends vital to only one occupation. The study was conducted in the metropolitan area of Pittsburgh, one of the most highly industrialized centers in the United States. Since the data were gathered through personal interviews, whatever inaccuracies the study contains are those inherent in the interview technique.

The occupations from which displacement occurred are listed in table 1, along with the number of workers drawn from each.

These workmen were "well-settled," with none of the "floating" type among them. In fact if there is any one feature likely to render the study atypical it is the absence of "floaters." Table 2 shows the age at which the workers began the occupations from which they were later displaced.

The modal age at which entrance

into the occupation took place was 16–20, showing that, in all likelihood, this was the only occupation ever pursued by these workers. Barely more than 10 per cent were past 30 when they entered their work, and more than 50 per cent were under 21. Not only did these men select their life work early, but they were stable workers, as shown by the number of years they had been on the job when machinery rendered their work obsolete. Their stability is shown in table 3, which indicates that, in general, the introduction of labor-saving machinery came at the period when these persons were fairly experienced. Table 3 shows them to be widely distributed, having spent from a few years to a lifetime in their work. Table 4 shows the age at which they were supplanted, and a glance will reveal that they were then in the prime of life. These men were also at the age when the responsibilities of life are greatest, families still young, homes unpaid for, and

TABLE 1

Occupations upon Which the Study Is Based, and Number of Workmen Each Furnished

OCCUPATION	NUMBER OF WORKERS
Glassworkers (Blowers, gatherers, etc.)	86
Miners (Loaders, drillers, etc.)	40
Steel workers (Shearers, levermen, knucklers, etc.)	24
Engineers (Stationary, dilley)	14
Firemen (Stationary)	13
Musicians (Theatre)	13
Teamsters	9
Railroaders (Signalers, Substation men, etc.)	8
Machinists	7
Air motor operators	5
Coke pullers	4
All others*	44
Total	267

* Other types of workers included those employed in zinc and tin mills, cement mixers and finishers, street car conductors, telephone operators, cabinet makers, painters, coopers, potters, bakers, etc.

TABLE 2

Ages at Which Workers Entered Occupations from Which They Were Displaced by Machines, Shown in Number and Percentage

AGE	NUMBER	PER CENT
11–15	34	12.73
16–20	114	42.70
21–25	66	24.72
26–30	24	09.00
31–35	13	05.00
36–40	11	04.12
41–45	3	01.12
46–50	1	00.04
51–55	1	00.04
Total	267	100.00

TABLE 3

Length of Time Workers Had Held Jobs From Which They Were Displaced

YEARS ON JOB	NUMBER	PER CENT
1–3	31	11.60
4–6	37	14.00
7–9	30	11.24
10–12	33	12.36
13–15	23	08.61
16–18	26	09.74
19–21	16	06.00
22–24	20	07.50
25–27	11	04.12
28 and above	40	14.98
Total	267	100.00

expenses likely to mount for some time to come.

The stability of this group of workmen may be explained by the fact that of the 267 involved, 153 served apprenticeships varying from a few months to 7 years. The 7 year periods were served by French and Belgian glass blowers. The most common length of training was found to be 3 years. For those who reported terms of less than one year, it would probably be more correct to say they served as helpers rather than as apprentices.

TABLE 4

Ages at Which Workers Were Displaced, Shown in Number and Percentage

AGE	NUMBER	PER CENT
11–15	1	00.04
16–20	10	03.74
21–25	24	09.00
26–30	53	20.00
31–35	45	16.85
36–40	39	14.60
41–45	34	12.73
46–50	33	12.36
51–55	17	06.36
56–60	6	02.24
61–65	5	01.87
Total.....	267	100.00

Not only were these people stable workers, they also tend to be equally stable as residents of one community. In fact one is tempted to state that they would more readily find new employment if they were more mobile. Only 50 saw fit to move to a new location once they became unemployed. There are, of course, a number of explanations for this immobility. Many of the men were buying or had bought homes, and could not sell advantageously. Others accepted undesirable jobs, rather than face the unpleasant task of re-establishing life in a strange location. Some were held by family ties; others lacked contacts that would enable them to secure employment elsewhere; still others were not of aggressive personality, and merely accepted the blow without making much effort to come back.

TABLE 5

Length of Time Workers Were Unemployed Before Finding New Positions

TIME LOST	NUMBER OF WORKERS	PER CENT
No time.....	76	28.46
Part-time employment at once.	10	03.74
1 month or less.....	11	04.12
2 months.....	4	01.50
3 months.....	11	04.12
4 months.....	4	01.50
5 months.....	4	01.50
6 months.....	13	05.00
7 to 11 months inc.....	3	01.12
12 months.....	20	07.50
13 to 23 months inc.....	24	09.00
2 to 3 years.....	24	09.00
3 to 5 years.....	10	03.74
Still unemployed.....	51	19.10
Not stated.....	2	00.74
Total.....	267	100.00

When displacement occurs, there follows a period during which the worker faces the perplexing and difficult question of finding new and suitable employment. Table 5 shows the length of time it took these workers to make such an adjustment.

It seems to be an established practice to give employment to workers holding positions on the higher levels, when the introduction of new machin-

ery makes the discharge of some of the force inevitable. Foremen and other executives will be retained in some capacity. This accounts for the large percentage of workers who lost no time at all. Valuable workers are retained if they care to accept other types of work. In spite of this policy, the amount of time lost between jobs is appalling. To account for this is not easy. It is not all due to the abnormality of the times, for loss of time occurs with surprising regularity, regardless of the date of displacement. Much of it is due to lack of local opportunity for reëmployment; glutted local labor markets, due to sudden displacement of large numbers of men; shock due to finding oneself without employment after having been steadily employed for many years; and lack of knowledge concerning methods of securing new employment. Eventually most displaced workers will find jobs, though in recent years it has not been an easy task. Of the 51 displaced workers who were still unemployed when we made the study, 40 had been displaced since 1929.

Of the 216 who found new employment, 53 were able to secure positions in some measure related to those they lost, while 163 were obliged to accept jobs that were entirely different. According to this study, a man has about one chance in four of securing similar employment, if he loses his job through technological change. The experience of years is worth little to the man who has been displaced by machinery. Only 50 workmen stated that their previous experience was valuable to them in their new positions, while 166 stated that it was of no value.

When asked whether they liked their new work as well as the old, replies could not be obtained from all, but those received were quite revealing. Fifty-two answered that they liked the new work as well or better than the old while 156 stated that they did not. When the new job is similar to the old, it is generally popular, but unrelated work is seldom liked. It will take years for men to like their new work. While some of the dislike may be attributed to the nature of the employment, it seems altogether likely that most of it rests upon the question of income. Many of these displaced workers stated that they would prefer their new jobs to the old, since they were easier, if it were not for the low wages they now receive.

TABLE 6

Comparison of Earnings in New and Former Employment (Figures Are Approximations Based upon Statements of 200 Workers)

	NUMBER	PER CENT
New paying less than old (amount not stated)	21	10.50
New paying four-fifths of old	7	03.50
New paying three-fourths of old	7	03.50
New paying two-thirds of old	14	07.00
New paying half of old	83	41.50
New paying one-third of old	19	09.50
New paying one-fourth of old	11	05.50
New paying one-eighth of old	9	04.50
New paying same as old	18	09.00
New paying more than old	11	05.50
Total	200	100.00

Technologically displaced workers were reëmployed at considerably reduced wages. Table 6 shows in approximate form the differences in earnings in old and new jobs. That

the drop in earnings is entirely due to the introduction of improved machinery cannot be definitely concluded, since the period of greatest displacement has also been a period of falling wage levels. There can be little doubt however that men, no matter how skilled they may have been, are worth relatively little when they are forced to enter a totally unrelated line of work. It is not surprising, therefore, to find such a large percentage of these men able to earn less than half as much in their new occupations as they were able to earn in the old.

It is interesting to note the extent to which industries seek to retain the services of workmen whose jobs are taken over by mechanical devices. Of the 262 workers who made statements in regard to the offering of other employment by concerns bringing about their displacement, 115 stated that they were offered such employment, while 147 were dismissed without such an offer. Employers do not heartlessly throw all men out of employment when they introduce mechanical labor. In fact a number of men testified that they honestly believed that under the new conditions they were superfluous, but their services were retained, nevertheless. Nine out of every ten offers of substitute employment were accompanied by salary reduction.

RETRAINING IS NECESSARY

All of these findings indicate that a program of retraining is vitally necessary. The following statements present the outstanding reasons why some definite steps should be taken to provide training facilities to fit men to take new positions equal in earning power and equally desirable socially to those they lost.

1. At displacement men are still young enough to profit by retraining, the modal age at displacement being 26–30, and the overwhelming number falling between 21–45.
2. Workers are spending too much time between losing one position and finding another.
3. The new positions are not liked by the workers and in most cases are not adequate for men of their ability.
4. The fact that such a large percentage of these workmen were highly skilled indicates that their mentality justifies additional training.
5. Workmen are being forced from skilled into unskilled labor and are losing all the value of their years of experience.
6. If these men could be rendered more mobile by retraining they could find more suitable employment at higher wages.
7. Too much financial loss is being suffered by displaced men at present. This has a disastrous effect upon themselves and their standards of living.
8. The social position of these men is jeopardized when they must become unskilled workers, after having been highly skilled.

News Notes

STATE LABOR LEGISLATION DURING 1933

The unprecedented amount and character of Federal legislation affecting the employer-employee relationship has tended to obscure the considerable number of labor laws enacted by the State legislatures during the past year. Probably more State labor legislation was passed, however, during 1933 than during any previous year. Twelve states established old-age pension systems. During the year seven enacted laws requiring the payment of a minimum wage to women and minors. Fourteen States ratified the proposed child labor amendment to the Federal Constitution and in nine states statutes were enacted supplementing the National Industrial Recovery Act.

ATTITUDES AND UNEMPLOYMENT

A report of the Personnel Research Federation's investigation of some of the psychological effects of unemployment has just been published under the title, *Attitudes and Unemployment: A Comparison of the Opinions and Attitudes of Employed and Unemployed Men.*

Realizing that unemployment does radically change the viewpoints and ideas of many men, the investigation described in this small book was designed to measure the *nature and extent* of these changes. Dealing with a group of professional engineers, the report describes how much bitterness toward the employing class has been engendered by employment, and how much morale has been lost. It tells how many more unemployed than employed men are favorably inclined toward communism, revolution, dictatorship, labor unions, and unemployment insurance, and how many more are critical of "rugged individualism," our system of government, religion, and a variety of other matters. The extent to which fear of unemployment arouses antagonisms and lowers occupational morale is also described.

This report may be obtained from Archives of Psychology, Columbia University, or from the Personnel Research Federation, 29 West 39th Street, New York. Price, one dollar a copy.

SELECTION OF PERSONNEL FOR PENNSYLVANIA STATE LIQUOR STORES

On the 29th of November, 1933, the Pennsylvania General Assembly enacted a law to control the sale of liquor in the Commonwealth through a system of State Stores, giving power to a control board appointed by Governor Gifford Pinchot to carry out the provisions of the law. The law provides that the Department of Public Instruction shall select the personnel for the operation and administration of the stores by competitive examination. January 2nd, 1934, was set as the date for the opening of the stores.

Anticipate, if you will, the problem faced by the Department in a state with 900,000 men and women unemployed, with all voters in the State privileged to apply for one of the 2000 positions. We distributed 150,000 application blanks. Of the 59,000 returned, 34,824 applicants were declared eligible to compete, and 32,569 wrote the examination.

All this was done in a sufficiently expeditious manner that on Christmas day, seventeen days after the bill was signed, the Superintendent of Public Instruction notified 1300 competitors requisitioned by the Liquor Control Board that they were to report on a certain date for instructions! Since then 500 more have been appointed.

Nine batteries of examinations, and a special series for executives were prepared

and administered to examinees applying for thirty-three types of positions. Over 2,000,000 pieces of printed matter were prepared. With the exception of one test all the examination batteries were of the new type objective form.

The examinations were administered under the direction of Public School Superintendents in 36 cities. They were aided in each center by a corps of assistants, a representative from the Department of Public Instruction, and two State police officers. Fifty high school buildings were used.

The examinations were scored and ranked as provided by law under direction of examiners appointed by the presidents of Pennsylvania state-aided higher institutions. The scorers worked day and nght for three days scoring the papers and ranking the 33,000-odd examinees.

The examinees were known only by number in the administration and scoring centers, and every precaution was taken as the law intended to make appointments on the basis of the couplet "what you had done and what you could do" rather than "what you had done and who you were." The only preference shown was that of 5 points in a hundred to those with military service as required by the law.

Unusual precautions were taken to safeguard the examinations from those who would defeat the intent of the law. Each candidate was finger-printed at the examination.

Because of the tremendous competition, an exceptionally high type of personnel has been selected. For example, out of the 244 State Store Managers appointed to date, 82 or ⅓ are college graduates. Eighty per cent have had at least one year's educational training beyond high school and all are high school graduates. In addition, they are equipped with an average of 12 years of successful business and clerical experience.

An evaluation of these selections is now being made on the basis of which we will be able to ascertain the selectivity of the examination.

—Walter B. Jones.

THE CURRENT OUTLOOK IN OCCUPATIONS FOR WOMEN

The Education Department of the National Federation of Business and Professional Women's Clubs has issued a series of thirty mimeographed pamphlets describing employment opportunities for women in as many occupations. It is not pretended that these reports are based on sophisticated research. They represent, rather, the carefully considered opinions of successful women in the various occupational fields.

MORE JOBS FOR COLLEGE GRADUATES

Employment opportunities for young college graduates are better than at any time during the past three or four years, according to a survey reported in the May 12 issue of The Literary Digest. This finding was based on returns of a questionnaire sent to university employment bureaus and editors of college newspapers. Improvement in employment conditions is limited to business and industry, prospects in the teaching field being still gloomy.

WHAT HAPPENED AT CLEVELAND

Ten of the major addresses presented at the last National Vocational Guidance Association convention held at Cleveland are printed in the May number of *Occupations, The Vocational Guidance Magazine.*

PERSONAL ITEMS

C. G. Stoll, Vice-president of the Western Electric Company, was recently elected President of the Personnel Research Federation.

Morris S. Viteles, University of Pennsylvania, will spend the coming academic year in Russia as a Fellow of the Social Science Research Council.

R. O. Beckman has joined the personnel division of the Farm Credit Administration.

T. H. A. Tiedeman, formerly of the Standard Oil Company of New Jersey, has succeeded Arthur H. Young as Secretary of Industrial Relations Counselors, Inc.

FORTHCOMING MEETINGS

June 4–6

Annual Conference of the National Office Management Association, Chicago

August 22–25

Seventeenth Annual Conference on Industrial Relations, National Council of Y.M.C.A.'s, Silver Bay, New York

September 5–8

Annual Meeting of the American Psychological Association, New York

September 11–15

Eighth International Psychotechnical Conference, Prague, Czechoslovakia

Personnel Books

EDITED BY O. MILTON HALL

HUMAN RELATIONS IN CHANGING INDUSTRY

By Harry Walker Hepner. New York: Prentice-Hall, 1934, 671 pp., $5.00

Reviewed by PAUL S. ACHILLES, *Psychological Corporation*

The author of this worthwhile book may be criticized for straying from conventional psychological paths, but in this reviewer's opinion he is to be congratulated. It is time psychologists made such ventures and this is indeed a bold one. It offers no less than a "sustaining philosophy" for all of us, employer, employee and fellow worker, based on psychological foundations. Call it just another book on "the way out" if you will, but let anyone who belittles it write a better one.

Probably *a way forward*, rather than *a way out*, conveys Hepner's thought more clearly, for "on-going activities" in the individual and in industry are what he would have us learn to handle with greater "*industrial artistry*." He indulges in no Utopian dreams nor does he advocate passive acceptance of things as they are. His philosophy is courageous. Acceptance of change—yes. Greater adaptability—yes. Effort to direct and achieve desirable social changes—yes, but not over-night. Above all, seeking *meaning* in the total evolving scheme of things and finding some "*worthful participation*" in it. Perhaps it is only the philosophy of "welcome each rebuff" or "barrier" but the author makes an excellent case for it and for the contributions of psychology to the adjustment process.

The book is logically arranged. An introduction gives the premises chosen, of which the chief are: that meaningful living is the great objective of all persons in industry; that in spite of the stresses and strains of constant change, modern industry, if rightly interpreted, contributes to worthful living; that the task of managers is to so interpret industry, and that the system of economy is relatively unimportant. The last is certainly a challenge to quit crying about the depression and do something practical about personal and personnel maladjustments!

Part One, consisting of two chapters, then presents the psychological principles for industrial relations developed around the concept that "the individual participates in life through adjustments." The author may have over-simplified and over-visualized the matter in the somewhat amusing illustrations, sketches, and diagrams, but this book is for students and laymen. It can also be read with profit, however, by any professional psychologist, not only for points, but for pointers on how to make points "stick."

Now comes the big departure for a book by an industrial psychologist. *To what* are we trying to adjust employees? The answer is no easy task but Hepner attempts it in Part Two. Your reviewer found this fascinating reading and maintains that it is a fine job. In fact, he feels that this able discussion of economic questions from the psychological point of view is exactly what has been needed to make psychology mean to the business man something other than tests or phrenology. The heading is "The Individual's Adjustments Take Place in a Changing World." There are seven chapters, nearly 250 pages, full of well-chosen and well-presented material which is frequently enlivened with pungent statements. Obviously it cannot be properly briefed in a review, but it takes you from

the status of the worker in Athens over "Man's Rough Road" (although this book of Keller's is not quoted) all the way to the status under NRA, with all the *pros* and *cons* of unemployment remedies, rugged individualism *vs.* planned economy, etc. It is excellent background material for any executive, and it ends with two thoughtful and helpful chapters on, "Enduring Principles," and "A Guiding Philosophy with Objectives for Leaders." Not to neglect the pungency: "A pound of good automobile costs less than a pound of butter"; "Owners, managers, and personnel men who prate about loyalty to the company, increased efficiency, and avoidance of waste, must also expect employees to say under their breath, 'Oh yeah' "; "Honest advertising is the business schoolroom for the masses; salesmanship at its best is the individual citizen's lesson under business tutorship. And the critics of modern advertising and salesmanship should realize that the educational methods and devices of business are no better or no worse than the educational methods of other institutions of society, such as the college, the church, and the government." Whatever side of the fence the reader may be on in regard to almost any moot question in business, he will be apt to find something to please and something to nettle him in these pages, which, of course, is an admirable inducement to thinking.

Parts Three and Four deal with the "How" of "industrial artistry" and rightfully make the book of immediate and practical value to executives, supervisors, and personnel men. The thesis for Part Three is that intelligent management enables each individual to become a worthy participant. Each chapter treats specifically of methods: Methods for the Modern Executive; Methods for the Trained Personnel Man; Informal Methods in Group Employee Relations; Formal Methods in Group Employee Relations; The Case Conference Method—Group Discussions of Problems in Industrial Relations. Part Four is a useful collection of typical case problems, 166 of them, covering 117 pages, which furnish a wealth of splendid material for use in the case conference method of training supervisors and foremen in industry, or students of industrial relations and psychology in college classrooms.

A book that "blames it on" the managers and personnel men themselves, rather than on the parents, the schools, or even the bankers or the professors in Washington is refreshing. This one may well be pardoned for the indictment since it offers so much in the way of constructive thinking and practical teaching as to *the way forward.*

STUDIES OF THE LABOR MARKET

THIRTY THOUSAND IN SEARCH OF WORK. By Gladys L. Palmer. Philadelphia: Pennsylvania State Employment Commission, 1933, 93 pp., $0.30

EMPLOYMENT TRENDS IN PHILADELPHIA. By Emmett H. Welch. Philadelphia: Pennsylvania State Employment Commission, 1933, 106 pp., $0.30

Reviewed by M. R. TRABUE, *University of North Carolina*

The State Employment Commission, organized as a branch of the Department of Labor and Industry of the State of Pennsylvania, was "sponsored by far-seeing organizations of business men, social educators and labor leaders," and was "supported by appropriations from the State, the community, and the Spelman Fund of New York." This commission established in February, 1932, a public employment office in Philadelphia "for the purpose of experimenting with standards and techniques that might be adopted by a nation-wide system of public employment exchanges." *Employment Trends in Philadelphia* and *Thirty Thousand in Search of Work* are not only valuable reports of basic data needed by local city and state authorities in planning effective social and economic programs, but they are splendid

demonstrations of the extremely useful types of labor-market analyses which a well organized system of public employment offices will be able to provide.

The data for the study by Welch were obtained chiefly from the reports of the United States Census Bureau for 1900, 1910, 1920, and 1930, although good use was also made of reports published by other agencies, such as the Industrial Research Department of the University of Pennsylvania and the U. S. Bureau of Labor Statistics. Numerous graphic charts show changes in the numbers of gainful workers in various fields from one census period to the next. In many respects this report has done for Philadelphia what a similar report by Dr. W. V. Bingham did for New York City.

Part I of Welch's report presents the trends for population and general employment as well as for many specific occupations in Philadelphia. Part II reveals the employment trends in manufacturing, with special attention to various industries which are of unusual importance in Philadelphia; and Part III reports a study of certain industries in which employment has a distinctly seasonal character. The author does not predict that the unemployment trends of the past forty years will each continue unchanged after the depression has become less severe, but he does supply some of the information upon which intelligent estimates for the future would need to be based.

Thirty Thousand in Search of Work is a statistical analysis of 31,159 applications for employment received at the public employment office from February 15 to October 15, 1932. In general these applicants were a "relatively stable group of workers, for over half of them had spent more than five years on the longest job they reported." They were somewhat younger than the regular working population of the city. Two-thirds of the applicants were men, and more than four-fifths of them were members of the white race. More than eight per cent of those studied reported that they had received some college education, and more than half had gone beyond the elementary grades. Women applicants were somewhat younger on the average and somewhat better educated than the men applicants.

An attempt was made in this report to identify certain occupations in which an "active labor surplus" seemed to exist and to suggest re-training as a means for distributing some of these surplus workers to fields in which a "potential labor shortage" existed. This suggestion has real merit, but putting it into operation would involve much more than is indicated in the discussion. Experiments recently conducted by the Minnesota Employment Stabilization Research Institute indicate that successful re-training may be done on the basis of detailed analyses of the occupational qualifications of individual workers, but that the re-training of whole groups, or even of individuals, is likely to do more harm than good if it is not based upon scientific occupational diagnosis of each worker.

These two studies of the labor market in Philadelphia show something of the possibilities of obtaining the basic employment information that should be collected in every city and state. As Dr. Palmer says in her final paragraph: "The one thing which stands out increasingly is that until a nation-wide public employment service includes the collection of current statistics on labor demand and supply for local areas as a part of its regular function, we will continue to know next to nothing about the character of our unemployment problems beyond knowing that there is a problem."

EDUCATIONAL LEADERSHIP

Eleventh Yearbook, Department of Superintendence of the National Education Association of the United States, Washington, 1933, 528 pp., $2.00

Reviewed by ORDWAY TEAD, *Harper and Brothers*

It is significant that the public educators of the country should devote an entire annual volume to the ramifications of the thesis of the universal need for leadership in education. It is evident that the influence of such progressives in education as speak out in the valiant and forthright *Educational Frontiers* (Appleton-Century, 1933) has had its leavening effect. A yeast is stirring in the educational world which should yield fine benefits in the ensuing years. Inevitably, perhaps, there is here a major emphasis upon the whole apparatus of education on its more structural and operating side. But a brave start at a philosophy and contemporary orientation is made in the first two chapters. "Teachers must," it is declared, "prepare to instruct in the true significance of the newly created and constantly gaining world relations." More might well have been said about the ways and means of giving content and effect to this declaration. But it is something for such a professional body to have started in this direction. The final chapter on the evaluation and rating of the leadership aspects of the school superintendent's work is an interesting attempt in a worthwhile direction. When one sees (Chapter VI) the statistics of the periodical reading of school superintendents throughout the country, one realizes that the need for self-scrutiny as to desirable intellectual pabulum for educators is a serious one.

COMPENSATION IN THE PROFESSIONS

By Lester W. Bartlett and Mildred B. Neel. New York: Association Press, 1933, 175 pp., $2.00

Reviewed by HAROLD F. CLARK, *Columbia University*

This book is a most valuable discussion of some of the factors underlying compensation in the different professions. The first chapter presents and discusses the factors affecting supply and demand in the different professions. Chapter II compares the various professions. The material in this chapter dealing with income, while very helpful, is far from adequate. This is due not so much to any lack of ingenuity on the part of the authors as to the fact that adequate information is not in existence. Chapter III discusses some of the factors determining compensation. Chapter IV deals with the income needed. Chapter V discusses criteria of compensation. An attempt is made to set up certain criteria by which one can judge the adequacy of the income in the different professions. Although this is an important and highly suggestive effort, the reviewer has the feeling that anyone acquainted with the demands of other occupational groups will note a certain tendency toward trying to defend relatively high income for the professions. It would perhaps be difficult to apply the same criteria to all occupations. What the country really needs is some method of determining the number of people not only in each profession but in each occupational group. This book provides the stimulating discussion of certain parts of the problem and should prove of very great value to all who are interested in the compensation of professional workers.

DYNAMIC SOCIAL RESEARCH

By John J. Hader and Eduard C. Lindeman. New York: Harcourt, Brace, 1933, 231 pp., $3.50

Reviewed by BRUCE V. MOORE, *The Pennsylvania State College*

The authors justify the title of the book by the thesis. Social research should be dynamic in that it should implement social change. Social change will in the future be brought about primarily through the use of collective agencies, and an understanding of these functional groups is imperative for our time. Social research may become dynamic only when investigators abandon illusory attempts at so-called objectivity and disinterestedness.

The four parts of the book attempt to answer four questions: What principles are needed in confronting a social problem? How should a social philosophy enter into social research? How should subjective elements be used in a valid method of research? How may valid research techniques be applied? In addition to answers to these questions there is presented much specific information on the functioning of joint employee-employer committees in industrial management; for the study grew out of fact-finding investigations of these committees and is illustrated by much concrete material from them.

Part One of the book develops the point that scientific management has had little to contribute on the relations of workers to workers, workers to supervisors, workers to management, management to owner, and management to the public. "So long as management leaders continue to believe that the problem of human relations in industry is exactly what it has always been, namely the adjustment of one individual to another, there can be little advance." The purpose of the book is to show how to study group relationships in a qualitative way.

Part Two develops four concepts. (1) *Impulsion:* "The principal analytical terms of which impulsion is inclusive are needs, wants, desires, and purposes generated by individual human beings but expressing themselves in social, or collective modes." (2) *Circumjacence:* "As a category to be used for psycho-social analysis, circumjacence is the term selected to describe those elements in the total situation which condition, limit, or channel the social group under observation, but only those elements which are reducible to psychological or sociological description." (3) *Interaction:* "That aspect of total social process which includes social stimuli, organizations of response to social stimuli, and overt responses together with the various relations revealed between the three terms." (4) *Emergence:* "Any evolutionary change in the quality of the consequences of joint committee action observable in the committee's impulsion, circumjacence, and interaction." In terms of joint committee action, emergents may vary all the way from acquiescence of employees under commands of management to a democratic integration of the interests of all through exploring differences and inventing a comprehensive conclusion.

Part Three is epistemological. Here is develped the corollary of the thesis, that the psycho-social investigator must start with values and a purpose. In contrast to the older conception of disinterestedness, the requirements of the new conception are: "(1) Research agent must accept the fact of his purposes and proceed to their clarification; (2) Research agent should cultivate those qualities of self-awareness which will allow him to take his interests into account; (3) Research agent should acquire the capacity to 'live into' the research situation; (4) Research agent should candidly include his values, as well as values as found in the research situation." Probably the most radical contention of the book is summarized in the statement that "reliability of fact will increase in proportion to the inclusion of purpose, not its fictitious exclusion." A further implication is seen in the statement that "social

statistics are not trustworthy unless the facts enumerated and collated have been examined by some other technique which is qualitatively distinguished from mathematics."

The description and illustration of six different techniques in Part Four will doubtless be the section of the book most used by practical students. These are techniques and devices by which facts or different aspects of reality are revealed through the relationship of a person (research agent) to another person as involved in the phenomena to be investigated, to an event as immediately observed, or to records of events in history. These techniques, in approximate order from the most subjective to the most objective, are interviewing, participant observing, observing by outsider, analysing cases, charting, and statistics. A chapter is devoted to each of these.

In interviewing the key principle is that "only when the interviewer and the interviewee are responding in the interest of a similar, if not an identical, goal can there be an eliciting of facts which is self-validifying." There should be reciprocal information-giving. "Enough information should be introduced to enlist interest and curiosity, but not enough to induce feelings of bewilderment or inferiority."

The chapter on the technique of charting is illustrated by two charts of joint committee procedure. The exposition of this method of graphic analysis should prove very helpful to the practical investigator. It also furnishes a technique for teaching committee leaders, personnel officers, or others interested in improvement of committee procedure.

This book is not the kind that will have popular appeal. Treatises on epistemology and research method are not of that class. Even to research workers, many parts will be tedious. As the authors themselves state in the chapter on statistics, "not many research students who have been 'bitten' by the current fashion of 'counting' will be prepared to submit themselves to logical necessities of this sort," in selecting categories for classification of data before counting can begin. The critical investigator, however, not only receives guidance in his criticisms and evaluations of psycho-social research, but he also is stimulated to develop further canons and refine the techniques of research.

THE ECONOMY OF ABUNDANCE. By Stuart Chase. New York: Macmillan, 1934, 327 pp., $2.50.

Two men are lost on a great desert. One has a full bottle of water, the other a bottle quarter filled. If they do not share, a fight will undoubtedly ensue. Transfer these men to a rowboat on Lake Superior. We would call them maniacs if they fought over the jugs under the changed conditions, surrounded with an abundance of fresh water. But all of western civilization is doing just that thing. We now live in the Economy of Abundance, and think and behave in the tradition of Scarcity. Industry and government must be radically altered to fit this inevitable new condition, lest we tip the boat and drown in our surplus.

This is the thesis which Chase expounds and defends with a formidable array of facts and figures and an engaging style. He describes the forty-fold increase in physical energy made available during the past century, the enormous increase in productivity, the changed social and economic pattern which is being forced by the power age and its techniques. And he outlines specifically the terms upon which the abundance pattern will function. These terms must be brought about.

Stuart Chase's brilliant analysis should be read by every thinking man.

MORE POWER TO YOU! By Walter B. Pitkin. New York: Simon and Schuster, 1933, 298 pp., $1.75.

Mr. Pitkin's latest best-seller is "a working technique for making the most of human energy." It is a journalistic encyclopaedia of scientific findings about energy consumption and of practical rules for increasing, conserving, and directing energy in everyday life. You can double your

energies, says Mr. Pitkin. "More Power to You!" is your manual for self-training.

MAKE YOUR OWN JOB. By Violet Ryder and H. B. Doust. New York: H. W. Wilson, 1933, 217 pp., $2.00.

This book is intended to be of practical assistance to persons seeking to create employment for themselves, particularly in helping them to select and establish small, one-man businesses. A wide variety of unusual occupations are informally described. These include traveling beauty parlor, neighborhood nursery, professional shopping, manufacture and sale of soap, pottery, lampshades and other articles, subletting apartments, and compiling mailing lists.

PSYCHOLOGY AND THE NEW EDUCATION. By S. L. Pressey. New York: Harper, 1933, 593 pp., $2.25.

This is no ordinary treatment of the field of educational psychology. "The aim has been not so much at a systematic presentation of psychological data and theory as at maximal usefulness in contributing to the understanding of educational problems." In consequence, the organization of subject matter is different from that usually found. Entire chapters largely new to the subject have been introduced, while some traditional materials have been omitted. The discussion of learning makes mention of no animal other than man. A chapter on the social psychology of the school years brings out the importance of social development during formative ages. The viewpoint throughout is practical and functional—and the result is a boon to teachers and students who wish to know how psychology can help them.

HEREDITY AND ENVIRONMENT. By Gladys C. Schwesinger. New York: Macmillan, 1933, 484 pp., $4.00.

The age-old heredity-environment controversy is here given scientific treatment. This is an organized collection of the available scientific evidence regarding the development of the mental traits of man. Since there can be no science without measurement, the author first surveys the status of measurement of the major mental characteristics. She then summarizes what is known about the influence of environment in the development of intelligence. A chapter is included on points of view held by outstanding psychologists and psychiatrists with respect to the development of personality.

A STUDENT'S DICTIONARY OF PSYCHOLOGICAL TERMS (Fourth Edition). By Horace B. English. New York: Harper, 1934, 131 pp., $.50.

This clear and concise dictionary of psychological terms will be useful to the layman as well as to the student.

A PERFORMANCE ABILITY SCALE: EXAMINATION MANUAL. By Ethel L. Cornell and Warren W. Coxe. Yonkers: World Book Company, 1934, 88 pp., $1.50.

A recognition of the need for more adequate non-verbal scales of mental ability is reflected in this volume. The authors, guided by their clinical experience with the New York State Education Department, have selected seven familiar performance tests for inclusion in their scale. Detailed instructions for administering and scoring are presented in the manual, along with experimental data bearing on the interpretation of discrepancies between Binet and Performance Scale scores.

WRITE IT RIGHT. By Ambrose Bierce. New York: Charles Bowman, 1934, 733 pp., $1.00.

This little book is dedicated to precision in writing. It is made up of a "blacklist" of frequently misused words, each of which is followed by the correct word, and by an illustrative sentence. The author's comments are often witty. The book will be valuable to those who appreciate the need for precision in expression.

New Books

BECOMING A WRITER. By Dorothea Brande. New York: Harcourt, 1934, 148 pp., $2.00.

CAREERS FOR WOMEN: NEW IDEAS, NEW METHODS, NEW OPPORTUNITIES. By Catherine Filene, ed. Boston: Houghton, 1934, 633 pp., $3.00.

COMMERCIAL CORRESPONDENCE COURSES AND OCCUPATIONAL ADJUSTMENTS OF MEN. By Charles Bird and D. G. Paterson. Minneapolis: University of Minnesota Press, 1934, 27 pp., $.50 (paper).

THE ECONOMY OF ABUNDANCE. By Stuart Chase. New York: Macmillan, 334 pp., $2.50.

A GUIDE TO CIVILIZED LOAFING. By Harry Allen Overstreet. New York: Norton, 1934, 223 pp., $2.00.

HOW TO DEVELOP YOUR PERSONALITY. By Clare Tree Major. New York: Grosset, 142 pp., $.75.

HOW TO DEVELOP YOUR SPEAKING VOICE. By Clare Tree Major. New York: Grosset, 156 pp., $.75.

MINERS AND MANAGEMENT. By Mary Van Kleeck. New York: Russell Sage Foundation, 1934, 391 pp., $2.00.

THE NEW DEALERS. By Unofficial Observer. New York: Simon & Schuster, 423 pp., $2.75.

PERMANENT PROSPERITY AND HOW TO GET IT. By John Bauer and Nathaniel Gold. New York: Harper, 266 pp., $2.75.

THE RETIREMENT OF PUBLIC EMPLOYEES IN VIRGINIA. By Rowland Andrews Egger and Others. New York: Appleton-Century, 285 pp., $4.00.

TECHNICS AND CIVILIZATION. By Lewis Mumford. New York: Harcourt, 1934, 506 pp., $4.50.

SUPPLY AND DEMAND OF COLLEGE TEACHERS. By James G. Umstattd. Minneapolis: University of Minnesota Press, 1934, 41 pp., $.50 (paper).

Current Periodicals

PREPARED BY LINDA H. MORLEY, *Industrial Relations Counselors, Inc.*

ACCIDENTS

United States. Labor Statistics Bureau. Accidents in manufacturing industries, 1926 to 1932. *Monthly Labor Review*, Dec. 1933, Vol. 37, p. 1388–1394.

Annual figures covering both frequency and severity rates. The tables, arranged by industry, cover each year from 1926 to 1932.

BUDGETS AND COST OF LIVING

Russell Sage Foundation Library. Family budgets and costs and standards of living—a selected list of recent references. New York: Aug. 1933, 4p. Bulletin No. 120.

Consists largely of magazine references since June, 1932. Practically all the entries are annotated.

CHILD LABOR

United States. Labor Statistics Bureau. Child labor in the United States, 1932. *Monthly Labor Review*, Dec. 1933, Vol. 37, p. 1361–1373.

Statistical analysis based on the number of employment certificates issued. Much of the information given is grouped by cities and comparisons made with 1929 and 1931.

CREDIT UNIONS

Why a credit union? *Factory Management and Maintenance*, Mar. 1934, Vol. 92, p. 113, advertising page 54, 56.

The plan of the Graton and Knight Co. is the basis of this article. Some statistics are also drawn from the experience of Armour and Co.

EDUCATION

ARMSTRONG, G. H. (Director of Education, International Business Machines Corp.). Employee education pays dividends. *Executive Service Bulletin*, Feb. 1934, Vol. 12, p. 3–4, 6.

Description of the program of the International Business Machines Corporation.

COHN, FANNIE M. (Executive Secretary, Educational Department, International Ladies' Garment Workers' Union). New era for labor education. *American Federationist*, Feb. 1934, Vol. 41, p. 157–160.

Discussion at the Workers' Education Bureau Conference, October 2, 1933, Washington, D. C. This article describes briefly the adult education program of the International Ladies' Garment Workers' Union.

EMPLOYEE REPRESENTATION IN MANAGEMENT

DUTTON, H. P. (Associate Editor, *Factory Management and Maintenance*). Works council—yes or no? *Factory Management and Maintenance*, Dec. 1933, Vol. 91, p. 479–481, advertising page 30, 32.

The point of view of management with a capital M, on this phase of the NRA. Mr. Dutton points out the stand which he thinks employers can properly take in the matter.

Chrysler Corporation. Employee representation in Chrysler plants. *Factory Management and Maintenance*, Nov. 1933, Vol. 91, p. 453–495, advertising page 30, 32.

Rules and regulations of the plan in operation in this company.

Goodrich (B. F.) Company. Goodrich cooperative plan. *Factory Management and Maintenance*, Dec. 1933, Vol. 91, p. 519–520.

Text of the employee representation manual for this company, giving the rules and regulations.

STUART, C. J. Experience in employee representation; ten years with a works council. *Factory and Industrial Maintenance*, Jan.; Feb. 1934, Vol. 92, p. 1–4; 53–55, advertising page 44.

Methods employed in the installation and management of this plan, with a summary of the results obtained over a period of years. The plan described was used in a large company having branches.

EMPLOYMENT

CROXTON, FRED C., AND FREDERICK E. CROXTON. Fluctuation of employment in Ohio in 1931 and 1932 and comparison with previous years. *Monthly Labor Review*, Dec. 1933, Vol. 37, p. 1307–1327.

A statistical analysis showing, among other things, that a decrease of 15.8 per cent in maximum employment took place between 1931 and 1932.

National Industrial Conference Board, Inc. Labor changes in 1933. *Conference Board Bulletin*, Jan. 20, 1934, Vol. 8, p. 1–7.

A summary of significant findings of the N.I.C.B. monthly inquiry into employment, hours and earnings in manufacturing industries from January to November, 1933. This statistical analysis reflects the influence of NRA and its administration.

EMPLOYMENT EXCHANGES

AMIDON, BEULAH. Route back to work; the U. S. Employment Service with its state and local branches. *Survey Graphic*, Mar. 1934, Vol. 23, p. 101–104, 134–135.

The plans and first accomplishments of the new U. S. Employment Service, established under the Wagner-Peyser Act, and of the Emergency Reemployment Service, superimposed upon it, are set forth. The article is based on a week in the headquarters at Washington.

CALLEN, E. GLENN (Department of Political Science and Sociology, Nebraska Wesleyan University). Control of employment agencies in the United States and abroad. *Information Service*, Feb. 17, 1934, Vol. 13, p. 1–4.

The situation in the United States examined in the light of the International Labour Office Draft Convention on this subject. Many decisions already handed down by United States courts are cited.

EYE STRAIN

LUCKEISH, MATTHEW (Director, Lighting Research Laboratory, General Electric Co.). Workers are human seeing-machines; light their way to efficiency. *Factory Management and Maintenance*, Mar. 1934, Vol. 92, p. 93–96.

Emphasizing the physiological effect of eye strain, the results of a survey of 1,907 plants in 182 cities are tabulated.

GERMANY

HAM, WILLIAM T. (Harvard University). Labor under the German Republic. *Quarterly Journal of Economics*, Feb. 1934, Vol. 48, p. 203–228.

This article is particularly valuable at present, giving as it does a brief historical summary of conditions leading up to the present crisis in Germany.

HEALTH

CROWDEN, G. P. (Lecturer in Industrial Psychology, London School of Hygiene and Tropical Medicine). Practical value of physiology to industry. *Human Factor*, Feb. 1934, Vol. 8, p. 57–69.

Part of a paper read before the Department of Industrial Cooperation at the British Association Meeting in Leicester, September, 1933.

The author summarizes a number of recent researches in the application of physiology to industry in such matters as muscular work and fatigue, noise, lighting and ventilation; and describes hitherto unpublished work of his own on the effect of lining topees and policemen's helmets with metal foil. A bibliography is included.

REDDEN, W. R. (M.D.; Director, First Aid, New York County Chapter, American Red Cross). Try cleanliness first. *National Safety News*, Feb. 1934, Vol. 29, p. 15–17.

"Before experimenting with fancy methods for the prevention of occupational dermatoses, why not try simple methods of personal and environmental cleanliness?"

HOURS OF WORK

FLANDERS, RALPH E. (President, Jones and Lamson Machine Co.). Would the thirty-hour week relieve or cure? *Factory Management and Maintenance*, Mar. 1934, Vol. 92, p. 120–123.

Argument is aimed to prove that a reduction in working hours is not advisable. Six "examples" are worked out on a percentage basis to illustrate the points made.

United States. Labor Statistics Bureau. Hours and earnings in foundries and machine shops, 1933. *Monthly Labor Review*, Dec. 1933, Vol. 37, p. 1459–1474.

Among other things, this study shows that foundry workers' earnings averaged 48.2 cents per hour and $14.25 per week in 1933 as compared with 60 cents per hour and $20.06 per week in 1931 and 62.4 cents per hour and $30.39 per week in 1929.

INCOME STATISTICS

KUZNETS, SIMON. National income, 1929–1932. National Bureau of Economic Research *Bulletin*, Jan. 26, 1934, No. 29, p. 1–10.

These estimates are the result of a study made by the Department of Commerce in cooperation with the National Bureau of Economic Research. They show changes in the total net product of the economic system by types of payment and by industrial source.

JOB ANALYSIS

DOOLEY, C. R. (Personnel Manager, Socony-Vacuum Corporation). Philosophy and procedure of a job analysis. *Personnel*, Feb. 1934, Vol. 10, p. 67–71.

The methods in use by the Socony Vacuum Corporation.

LABOR PRODUCTIVITY

BOWDEN, WITT (United States Bureau of Labor Statistics). Productivity, hours and compensation of railroad labor. *Monthly Labor Review*, Dec. 1933, Vol. 37, p. 1275–1289.

This is the first of three articles on railroad labor. Discusses trends affecting all employees of class I railroads, 1916 to 1933.

NATIONAL INDUSTRIAL RECOVERY ACT

BUTLER, HAROLD (Director, International Labour Office). Course of American recovery. International Labour Office, Jan. 1934, Vol. 29, p. 1–20.

This article is based largely on first hand observation by Mr. Butler and Mr. P. W. Martin while on a visit to this country. It gives a general sketch of the present situation and suggests the course of events which has brought it about. It is, of course, written from the European point of view.

FRASER, CLARENCE (Division Traffic Supervisor, Bell Telephone Co. of Canada). Impressions of the NRA in action; a week in New York. *Labour Management*, Feb. 1934, Vol. 16, p. 28–30.

Written by an English industrial relations manager.

GREEN, WILLIAM (President, American Federation of Labor). National Labor Board; an open letter from President Green to the members of federal unions. *American Federationist*, Jan. 1934, Vol. 41, p. 24–29.

Details of the procedure necessary in filing complaints with the National Labor Board. Written for the employee, but equally valuable to the employer.

HAY, WILLIAM WREN. Rôle of statistics under the new deal: pitfalls in faulty interpretation. *Annalist*, Feb. 2, 1934, Vol. 43, p. 219–220.

Critical discussion of the statistical output of government departments under present conditions. Not very comprehensive, but illustrated by examples.

HERRMANN, MILTON C. (President, Herrmann Handkerchief Co.), and E. JOHNSTON COIL. Management of an industry; the plan offered by the code of the handkerchief industry. *Bulletin* of the Taylor Society, Aug. 1933, Vol. 18, p. 82–85.

The scientific management point of view applied to the provisions of one code in an effort to see wherein the four major principles of scientific management, viz., research, standardization, control and coöperation are inherent in the provisions.

HILLMAN, SIDNEY. NRA, labor, and recovery; an address at the American Academy of Political and Social Science, January 6, 1934, broadcast over a national hook-up. *Advance*, Jan. 1934, Vol. 20, p. 12, 19.

A critical estimate of the labor provisions of the codes by the President of the Amalgamated Clothing Workers of America.

International Labour Office. Hours of work provisions under the National Industrial Recovery Act. *International Labour Review*, Jan. 1934, Vol. 29, p. 84–107.

An analysis of the hours provisions of codes which were in effect up to October, 1933, and the President's Reëmployment Agreement. The article examines the subject under the following headings: normal hours of work; exemptions and exceptions; reports and supervision.

SLICHTER, SUMNER H. Labor under the National Recovery Act. *Harvard Business Review*, Jan. 1934, Vol. 12, p. 142–163.

Analysis of the provisions, implications and economic effects on labor under the NRA.

TEAD, ORDWAY (Editor, Economic Books, Harper Bros.; Lecturer on Personnel Administration, Columbia University). Interpretative forecast of the NRA; is the trend toward Fascist or socialized self-government. *Bulletin* of the Taylor Society, Aug. 1933, Vol. 18, p. 78–81; also in: *American Federationist*, Jan. 1934, Vol. 41, p. 17–23.

Convinced that "some kind of permanent national economic organization is bound to eventuate in this country in the next few years" Mr. Tead therefore urges upon his readers the acceptance of the "New Deal" and its implications.

NURSING SERVICE

LOCKHART, LEONARD P. (Medical Officer, Boots Pure Drug Co.). Place of the nurse in modern industry. *Industrial Welfare and Personnel Management*. Jan. 1934, Vol. 16, p. 18–23.

Though based on English practice, the general statement and the opinions expressed in this speech are applicable anywhere.

PSYCHOLOGY

RODGER, ALEC. Why and how the vocational psychologist studies temperament. *Human Factor*, Feb. 1934, Vol. 8, p. 48–56.

The greater part of a paper read before Section J (Psychology) at the British Association Meeting at Leicester, September, 1933.

The vocational psychologist has long emphasized the importance of the study of temperament. In this paper Mr. Rodger discusses the meaning of the term, and describes how the vocational psychologist daily tackles the problem of investigating the elusive characteristics which it covers.

SAFETY

HULBERT, HAROLD S. (M.D.; F.A.C.P.). What does a reëmployed worker think about? *National Safety News*, Feb. 1934, Vol. 29, p. 9, 60.

This program for getting safety ideas across in a difficult situation could be used profitably by other departments.

KEEFER, DEAN (Director, Industrial Division, National Safety Council). Foremen as teachers; the successful foreman causes his men to learn correct habits and to think. *National Safety News*, Feb. 1934, Vol. 29, p. 18.

Brief outline of the necessary steps in teaching safety and of the necessary qualifications in the teacher himself.

LOGIE, J. J. (Supervisor of Employment and Safety, General Tire and Rubber Company). Outside troubles make unsafe workers; even trivial disturbances off the job may pave the way for an accident. *National Safety News*, Feb. 1934, Vol. 29, p. 7, 32.

Psychological aspects of accidents in the plant.

SCIENTIFIC MANAGEMENT

HENDERSON, P. E. (Comptroller, Mount Holyoke College). Scientific management in college administration. *Bulletin* of the Taylor Society, Feb. 1934, Vol. 19, p. 8–9, 17.

This paper which was presented to a meeting of the Taylor Society, New York, December 8, 1933, offers a rather detailed description of an actual installation.

UNEMPLOYMENT INSURANCE

PARKINSON, R. (Manager of Personnel Activities, American Optical Co.). Suggestions concerning unemployment insurance. *Personnel*, Feb. 1934, Vol. 10, p. 86–95.

A general article, written from the point of view of an industrial relations executive who has had experience in handling an unemployment benefit plan.

UNEMPLOYMENT RELIEF

United States Labor Statistics Bureau. Subsistence-homestead movement under National Recovery Act. *Monthly Labor Review*, Dec. 1933, Vol. 37, p. 1327–1330.

The two projects now under way are described. The one is "Arthurdale" at Reedsville near Morgantown, W. Va.; the other at Dayton, O.

WAGES

SCHOLSSBERG, JOSEPH. Evolution in terminology. *Advance*, Jan. 1934, Vol. 20, p. 11.

On account of the wage regulations in NRA codes, the definitions of wages which have been used at different stages of economic advance and collected in this article, are of particular interest at the present time.

United States Labor Statistics Bureau. Minimum wage legislation in the United States. *Monthly Labor Review*, Dec. 1933, Vol. 37, p. 1344–1354.

Sixteen states now have minimum wage laws, of which number, seven were passed during 1933. The principal provisions of all minimum wage laws in effect in 1933 are given.

WOMEN

MILLS, RALPH G. (M.D., Wiley Smith Clinic). Two-shift employment of women—a discussion of certain hygienic and moral questions where the two shifts do not cover midnight to morning. *Industrial Medicine*, Jan. 1934, Vol. 3, p. 25–30.

A defense of night work for women based mainly on physiological considerations.